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REPORT ON THE 1985 INDUSTRIAL DISCHARGES IN ONTARIO

DECEMBER 22, 1986

Ministry
of the
Environment

Ontario

The Honourable
Jim Bradley
Minister

Rod McLeod
Deputy Minister

Report on the
1985 Industrial Discharges
in
Ontario

December 22, 1986
(Revised, February 1987)

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REPORT ON DIRECT INDUSTRIAL DISCHARGES

ONTARIO 1985

1.0 INTRODUCTION

The Ontario Ministry of the Environment report on Direct Industrial Discharges for the year 1985 continues to include information published on sources in previous years. Thus, part of the information in this report meets the requirements of Article VI 1(c) of the 1978 Great Lakes Water Quality Agreement (G.L.W.Q.A.). The Agreement states that an annual report, which includes compliance schedules and the status of compliance with monitoring and effluent restrictions, shall be provided to the International Joint Commission, IJC. The portions of the Report related to the Great Lakes Basin and thus to the IJC are identified (Appendix D). This report continues to use the nomenclature, definitions and objectives of the Agreement.

Additional industrial sources are included in this report, over and above 1984. The effluent loadings and loading limits for 147 individual industrial plants are contained in this report, whereas in 1984 the number of sources reported was 105, all of which discharged into the Great Lakes Basin. Of these, 103 are reported herein, since one source is now discharging to a municipal sewer and another closed in 1985. The additional 44 are either direct dischargers into other drainage basins in Ontario or discharge into the Great Lakes Basin but do not meet the I.J.C. criteria (see Appendix D). More industrial sources will be reported in future reports; not all direct discharges that MOE deals with have been entered into the Industrial Monitoring Information System, I.M.I.S.

Although Ontario has more than 147 industrial plants, the majority of the province's 11,000 industrial plants are not included because they discharge into municipal sewers and the wastewaters are treated by municipal sewage treatment plants.

For 1985, the actual monthly and annual average pollutant loadings and flows are shown for each source. In previous years only calculated annual averages were provided. In the majority of cases, the requirements are set as maximum 30 day or monthly averages.

These requirements may be legal limits (Control Order, Certificate of Approval, Requirement and Directions, Federal Regulation), the Ministry's industrial concentration guideline objectives, Federal Regulations and Guidelines or Best Professional Judgement criteria.

In previous reports, only the self-monitoring data of conventional pollutants was provided. In this report, the inclusion of trace contaminant information begins.

Program reviews made by the Ministry include comparisons of effluent limits by various Regulatory agencies. Such comparisons are included in the progress sections for the Petroleum Refineries and the Pulp and Paper groups.

Out of 147 sources, 48 met their monthly average and 87 met their annual average requirements. Additional information is provided in the compliance section and Appendix A.

2.0 INDUSTRIAL DISCHARGES - 1985 DATA

While this 1985 report contains information similar to that presented in the 1984 IJC Report, the monthly averages as well as the annual loadings and flows are reported. The bulk of this report consists of the Wastewater Discharge Summary contained in Appendix A. It consists of a summary sheet for each of the 147 industries. Summary sheets are in alphabetical order within each major basin - Hudson Bay, Lake Superior, Lake Huron, Lake Erie (includes St. Clair River, Lake St. Clair and Detroit River), Lake Ontario, St. Lawrence River and Ottawa River.

The following information is presented for each discharge source.

1) The name of the discharger and the municipality in which the plant is located.
2) Its MISA sector name.
3) The receiving water body.
4) A description of the industrial activity.
5) Effluent quality as related to the industrial activity. The industrial activity and the specific pollutants are linked.

6) Effluent treatment equipment.
7) The nature of the flow--continuous or intermittent; the means of discharge--surface, open pipe, submerged diffuser, or drainage ditch, and, the number of discharge points.
8) Comments on the effluent requirements in particular where the limit is exceeded.
9) The Ministry of the Environment Region and the District Office that deals with the discharger.
10) The average monthly effluent flow discharged by the source.

11) The average monthly pollutant load discharged by the source and requirement limits which may be a guideline, a best professional judgement value, a legal number (set by Control Order, Requirement and Direction, Certificate of Approval or Federal Regulation). Some discharges are seasonal and thus twelve monthly results are not available. Some pollutants are measured on a quarterly or semi-annual basis.
12) Data on pollutants which are monitored but not limited.
13) Ministry fish toxicity data for some industries.

3.0 EFFLUENT LIMITATIONS

The Ontario Ministry of the Environment employs a variety of measures to encourage compliance with its requirements, ranging from voluntary measures, formal programs, Control Orders, Requirements and Directions, and prosecution. The measures provide a degree of flexibility which enables the consideration of local circumstances in addition to provincial environment objectives.

The implementation of pollution control is a co-operative federal/provincial endeavour. Under the federal Fisheries Act, national legally binding Regulations and voluntary Guidelines set effluent limits for specific industrial sectors. Federal Guidelines set minimum acceptable national standards for existing plants, while Regulations prescribe national effluent limitations for new and expanded plants for various industrial sectors. The only exception is the Regulation for chlor-alkali plants which apply to both existing and new facilities.

Ontario has agreed, under the Federal-Provincial Accord for Environmental Protection, to adopt pollution control requirements which are at least as stringent as the national requirements. Since most Ontario plants are in the "existing" category, federal Guidelines apply to the vast majority of the plants in this report. Currently, these federal effluent Guidelines and Regulations (year of promulgation) apply to: Pulp and Paper (1971), Petroleum Refineries (1973), Metal Mining (1977), Mercury Cell Chloralkali Plants (1977), Metal Finishing (1977) and Meat and Poultry Processing Plants (1977). Under these Fisheries Act Regulations and Guidelines, it is an offence to violate a regulation limit. Although it is not an offence to exceed a guideline limit, meeting such a limit is considered compliance with the spirit of the law (Fisheries Act) which prohibits the deposit (discharge) of deleterious substances into waters frequented by fish. Federal Guidelines are, in fact, statements that indicate which practices will be considered necessary by the Federal government to meet the intent of the Fisheries Act.

3.1 Legal Requirements

Legally enforceable Control Orders under section 113 of the Environmental Protection Act may be issued to any existing plant. Control Orders define tasks and compliance dates by which specific tasks must be completed. Legally enforceable Requirements and Directions may also be issued under section 51 of the Ontario Water Resources Act. The requirements for issuance of these documents are different between the two Acts. For some sources, there are federal Regulation limits.

Certificates of Approval (C of A) for sewage works are issued under the Ontario Resources Act. In the past, the C of A was an approval to install pollution control equipment with the design numbers shown in the C of A. Recently some sewage work approvals include legally enforceable effluent limitations. The C of A shows maximum limits.

3.2 Effluent Guideline Limits

Historically, for most sources, Ontario has taken an effluent guidelines approach in setting provincial requirements. This approach, which was incorporated into the "Industrial Guidelines", was based initially on experience with municipal sewage treatment systems. It was presumed that treated industrial effluents should have the same pollutant concentrations as treated municipal effluent. However, since industrial effluents are quite different from municipal effluents in regard to specific pollutants, pollutant concentration and volume flow, application of the same treatment technology did not result in similar treated effluent concentrations. Industrial wastewater effluents in many cases would require dilution by cooling water, etc. to meet the effluent concentrations. Guidelines allow for this difference where similar treatment technology has been installed.

New plants recycle and reuse water in-plant to a much greater extent than do older plants. As a result, even when such plants use a highly effective treatment system, the effluent may exceed concentration limits. In these situations, the Ministry sets loading limits on a kilograms per day basis rather than on an effluent concentrations basis.

Ontario also uses a "water quality approach" in setting effluent limits.* In the case of biodegradable pollutants, every river or lake has a definable dilution, dispersion or assimilation (self-purification) capacity for non-persistent waste discharges. Water quality considerations take precedence when biodegradable discharges exceed the assimilative capacity of the receiving waters, but are within the limits set by federal Guidelines or Regulations. In these cases more stringent requirements, based on the assimilative capacity, are used to set effluent loading limits. Some plants employ secondary treatment facilities to reduce biodegradable discharges; some of these biodegradable compounds are defined as toxic organics. The degree of biodegradation varies for specific compounds.

3.3 Best Professional Judgement Limit

Where there are no legal limits, the MOE District Officer may set a Requirement based on his Best Professional Judgement. This incorporates a review of the manufacturing technology, effluent treatment technology and past performance. The source will have demonstrated that its effluent quality can be controlled to lower limits than those in any Guideline.

Where innovative technology is being tried, the limits may be set out in a Certificate of Approval. Best Professional Judgement would also be used in this case.

Thus, limits to the various discharges are set in several forms: pollutant concentrations (milligrams per litre), pollutant loadings (kilograms per day), load per unit of production (kilograms related to production rate), and radioactive loadings (becquerels per litre per day). These limits may be based on any of the above rationales.

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* Water Management: Goals, Policies, Objectives and Implementation Procedures of the Ministry of the Environment. November 1978. Revised May 1984.

3.4 Toxicity

The acute toxicity test may be used to set effluent quality limits. Under federal Regulation, new pulp and paper mills must pass the 96 hour continuous flow lethality test as defined by the 1971 Regulation. For existing mills, the toxicity test has in practice been treated as a guideline. The federal 1971 Regulation does not define when altered or expanded mills should meet new pulp and paper allowables. Of the 28 pulp and paper mills in Ontario discharging directly to surface waters, past toxicity tests indicate that over half of the mills usually fail or always fail the toxicity test. A different fish acute toxicity test has been used for the petroleum refineries in the Federal Guidelines since 1974. Under the federal petroleum refinery effluent Regulation and Guidelines, the petroleum refineries are required to do a 24 hour static acute fish lethality test. Ontario petroleum refineries have, for the most part, passed this test since 1976. Ontario's test is a 96 hour static procedure.

Ontario's policy (Water Management, page 18, Toxicity Testing) states that " Undiluted industrial effluents or other discharges which induce more than 50 % mortality over 96 hours under static test conditions may require more rigorous biological testing to determine if additional treatment is needed to afford adequate protection to the environment." This is further amplified in (Water Management, page 22, Mixing Zones, 3 (a)).... "No conditions within the mixing zone should be permitted which (a) are rapidly lethal to important aquatic life (resulting in conditions which cause sudden fish kills and mortality of organisms passing through the mixing zones)."

The validity of using a laboratory fish toxicity test (see Section 6, Toxicity Test) when few fish kills are reported is often raised. Why does a massive fish kill not occur in the receiving water body when an effluent fails the laboratory acute lethality test? There are many reasons. For instance, fish may pass through safely; fish avoid industrial plumes; etc.

3.5 New Monitoring and Regulatory Initiatives (MISA)

The Ministry has developed a new program to reduce the flow of toxic chemicals into Ontario's waterways: MISA - The Municipal - Industrial Strategy for Abatement.

The Ministry of the Environment (1986) is developing Monitoring and Reporting Regulations that will set minimum legal requirements for the submission, accuracy and reliability of self-monitoring information, including specifications for sampling and analytical protocols and quality assurance and quality control procedures. Environment Canada and the various industrial groups are providing technical assistance.

These new Regulations will specify lists of pollutants to be sampled, analyzed and reported, and will include a set of sampling schedules for each defined industrial (and municipal) sector. When implemented, the Regulations will significantly expand the available data base on emissions of toxic substances and result in greater uniformity in reporting.

This data base will be used by the Ministry of the Environment to formulate compliance Regulations in which the effluent limits, based on best available technology economically achievable, will apply to both new and existing plants. Receiving water quality based limits will also be determined and the more stringent of the water quality based or technology based limits will be applied.

In 1986, four Technical Advisory Committees of industry and government representatives began a scientific review of trace toxic compounds in the effluent from the Petroleum Refining, Organic Chemicals, Pulp and Paper, and the Metal Mining and Refining Sectors. For additional comment and data on trace toxic compounds see Analysis of Trace Contaminants and Trends, Petroleum Refineries Progress.

For MISA purposes, Ontario's industries will be placed in one of the following categories.

- PETROLEUM REFINERIES (0100)
  Oil Refineries that manufacture a family of refined petroleum products and blend lubricating oils and grease.
- ORGANIC CHEMICALS (0200)
  Factories that manufacture organic chemicals, plastics and synthetic fibres.
- METAL MINING AND REFINING (0300)
  Industrial activities that consist of mining and concentrating ores and smelting and refining non-ferrous metals.
- INDUSTRIAL MINERALS (0400)
  Factories that are primarily engaged in mining and processing non-metallic minerals including asbestos, gypsum, potash and sand (aluminum oxides).
- PULP AND PAPER (0500)
  Mills that make pulp, paper, paperboard, corrugating medium and boxboard from logs and used paper (newspaper, ledger paper, etc).
- IRON AND STEEL (0600)
  Factories that make iron and steel from ore, scrap and coal.
- ELECTRIC POWER GENERATION (0700)
  Establishments that generate electrical power using fuel oil, natural gas and uranium.
- INORGANIC CHEMICALS (0800)
  Factories that make inorganic chemicals (sulphuric acid, caustic hydrochloric acid, fertilizers etc.)

Table 1 - The MISA Timetable

SECTOR		START	REGULATION	
			MONITORING	LIMITS
0100	Petroleum Refining	APR 86	APR 87	APR 88
0200	Organic Chemicals	MAY 86	JUN 87	JUN 88
0300	Metal Mining and Refining	DEC 86	DEC 87	DEC 88
0400	Industrial Minerals	DEC 86	DEC 87	DEC 88
0500	Pulp and Paper	NOV 86	MAR 88	JUN 89
0600	Iron and Steel	FEB 87	APR 88	MAR 89
0700	Electric Power Generation	APR 87	MAY 88	APR 89
0800	Inorganic Chemicals	JUN 87	JUN 88	JUN 89
0900	Municipal Sewage Treatment Works	MAY 86	SEPT 88	DEC 89

3.6 Analysis of Trace Contaminants.

Great advances have been made in the field of contaminant analysis. In the 1950's, prevailing methods could measure effluent pollutants in the parts per thousand (or .01%) range. Methods have improved now so that some organic and most inorganic pollutants can be accurately identified and quantified in the parts per trillion range.

In the 1950's, an advance was made in organic chemical analysis with the commercial development of gas chromatographs (GC). The functions of a GC are as follows.

(a) Separation of a mixture of compounds into individual components (usually relies on the compound's physical and chemical nature, volatility, polarity, molecule size, etc.).

(b) Detection and quantification of each individual compound as it is eluted (the detector response is proportional to the concentration). However, the resolution for complex mixtures was limited and other confirmatory techniques like infrared analysis were needed.

In the mid 1960's, scientists developed ways of interfacing a mass spectrometer (MS) to a gas chromatograph. Thus, the MS became, in essence, a very specialized and highly sophisticated detector for the GC. With these two instruments coupled together, the individual compound separated by the GC enters the MS and a "finger-print" known as a mass spectrum is produced. This mass spectrum is compared with all those stored in a computer library associated with the instrument and if a match is found the compound is identified.

In the period between 1975 and 1980, GC/MS instrumentation advanced significantly, especially with regard to the computer search capabilities and libraries.

The new instruments were programmed to allow rapid identification of an unknown compound by comparing its mass spectrum with over 30,000 organic compounds in a reference library.

GC/MS has been the major instrument used in various trace contaminant studies made by Ministry of Environment (MOE), Environment Canada (E.C.), U.S. Environmental Protection Agency (EPA), Petroleum Association for the Conservation of the Canadian Environment (PACE), American Petroleum Institute (API), National Council for Air and Stream Improvement of Pulp and Paper Industry of the USA (NCASI), Chemical Manufacturers Association (CMA) and others.

At the same time, methods such as atomic emission and atomic absorption spectrophotometry have been developed to permit rapid, sensitive, multi-element metal analysis.

For specific treated industrial effluents like those from Ontario's petroleum refineries, these advances in analytical methods have resulted in the identification and quantification of some organic compounds in the parts per trillion range.

Trace contaminant data on effluents from the pulp and paper industry were published in the MOE report Inventory of Pulp and Paper Mill Effluent Constituents - Lake Superior by C. Cherwinsky and D. Murray (April 1986).

Trace contaminant information from joint surveys (MOE and E.C.) on the Niagara River is found in:

NRTC Appendix Report: Canadian Point Sources To The Niagara River Final Report on MOE and EPS 1981/82 Surveys (1985) (Published).

Trace contaminant data are also found in the following Environment Canada reports (publication date) which summarize joint surveys carried out by both federal and provincial officials:

1984 Survey of Northern Wood Preservers Inc.,
Thunder Bay, Ontario, October (1986)

1984 Tetra-Ethyl Lead Plant Survey,
Ethyl Corporation of Canada Ltd.
Corunna, Ontario (1986)

Industrial Effluent Survey, Domtar Inc.
Domtar Packaging Group, Trenton, Ontario
November 16-19, 1981 (1985)

Industrial Effluent Survey, Domtar Chemicals
Group - Wood Preserving Division
Trenton, Ontario, Nov. 16-19, 1981 (1985)

Industrial Effluent Survey, Bakelite
Thermosets Ltd., Belleville, Ontario
November 2-5, 1981 (1984)

Industrial Effluent Survey,
Dupont Canada Inc., Maitland, Ontario
June 21-25 (1984)

Industrial Effluent Survey, Celanese
Canada Inc., Maitland, Ontario
January 21-25, 1982 (1984)

1980-81 Cornwall Point Source Survey (1986)

Additional trace contaminant data, included in the Upper Great Lakes Connecting Channels Studies (E.C. with MOE participation), are as follows.

SOURCE	Samples Taken		Public Release	Conventionals	Metals	Volatiles	Extractable	Pesticides	PCBs
St. Mary's Paper	1986	5	1987	X	X	X	X	–	X
Algoma Steel	1985	30	1987	X	X	X	X	Dioxin	X
	1986	65	1987	X	X	X	X	–	X
CIL (Courtright)	1986	1	1987	X	X	X	X	–	X
Chinook Chemicals	1986	1	1987	X	X	X	X	–	X
Dow Chemical	1985	1	Jan 1986	–	–	X	X	X	X
	1986	1	1987	X	X	X	X	–	X
Esso Petroleum	1985	1	Jan 1986	–	–	X	X	X	X
	1986	5	1987	X	X	X	X	–	X
Esso Chemicals	1985	1	Jan 1986	–	–	X	X	X	X
	1986	1	1987	X	X	X	X	–	X
Ethyl Corp.	1986	5	1987	X	X	X	X	–	X
Dupont (Corunna)	1986	1	1987	X	X	X	X	–	X
Polysar (Sarnia)	1985	1	Jan 1986	–	–	X	X	X	X
	1986	6	1987	X	X	X	X	–	X
Petrosar (Polysar)	1986	5	1987	X	X	X	X	–	X
Shell Oil	1986	5	1987	X	X	X	X	–	X
Suncor	1985	1	Jan 1987	–	–	X	X	X	X
	1986	5	1987	X	X	X	X	–	X
Union Carbide (Corunna)	1986	3	1987	X	X	X	X	–	X
Lambton Generating	1986	1	1987	X	X	X	X	–	X
Ford (Windsor)	1985	5	1987	X	X	X	X	–	X
Wickes (Windsor)	1985	3	1987	X	X	X	X	–	X
Allied Chemical (Amherstburg)	1985	5	1987	X	X	X	X	–	X

Note: X means analysis was or will be done.

4.0 COMPLIANCE

The actual monthly average and the calculated annual average were compared to the pollutant limit or requirement. Table 2, pages 16, 17, 18 and 19 summarize such a comparison for the point sources in this report.

For the years 1985 and 1984, the compliance status is as follows.

	1985	1984
- Sources reported	147	105
- in (out) compliance with annual averages	86(59)	55(45)
- in (out) compliance with monthly averages	47(98)	-
- companies with no requirements	2	5
- companies instituting controls	15	14
- control order requiring further reduction beyond current levels.	28	9

In comparing 1984 compliance status with 1985, only annual averages for companies discharging to the Great Lakes are presented.

	1985	1984
Total Reporting	103	105
Total in Non-Compliance	47	45
Total in Compliance	54	55
No Requirement	2	5

Parameters which have been exceeded by a source are identified. For companies not in compliance, refer to the company source sheets in Appendix A for comments.

The word "compliance" as used in this report does not indicate that no contraventions of the legislation and regulations have occurred, but rather that the data recorded in the report does not, in itself, demonstrate that there have been contraventions.

TABLE 2
1985 COMPLIANCE SUMMARY

COMPANY NAME	LOCATION	PAGE NUMBER	IN COMPLIANCE MONTHLY	IN COMPLIANCE ANNUAL	COMPANY INSTITUTING CONTROLS	SEE COMPANY SHEET	CONTROL ORDER REQUIRES FURTHER REDUCTIONS	PARAMETERS IN EXCEEDANCE OF MINISTRY GUIDELINES
ABITIBI-PRICE INC.	SMOOTH ROCK FALLS	A-1		X		X	X	SS, pH
ABITIBI-PRICE INC.	IROQUOIS FALLS	A-3	X	X			X	
ABITIBI-PRICE INC. (FT. WILLIAM DIV.)	THUNDER BAY	A-23	X	X			X	
ABITIBI-PRICE INC. (PROVINCIAL PAPERS DIV.)	THUNDER BAY	A-25	X	X			X	
ABITIBI-PRICE INC. (THUNDER BAY DIV.)	THUNDER BAY	A-27	X	X			X	
AGNICO EAGLE MINES LTD. SILVER DIVISION	COBALT	A-287				X		ARSENIC
AGNICO EAGLE MINES LTD. (REFINERY)	COBALT	A-289		X		x		ARSENIC
AMERICAN STANDARD DIVISION OF WABCO STANDARD	CAMBRIDGE	A-119				X		IRON, SS, pH
ATLAS STEEL COMPANY LTD.	WELLAND	A-187				X		IRON
BAKELITE THERMOSETS LTD.	BELLEVILLE	A-189						PHENOLICS
BCL (FORMERLY TCF)	CORNWALL	A-269					(X)	ACIDITY, BOD
BEAVER WOOD FIBRE COMPANY	THOROLD	A-191						BOD, SS
B. F. GOODRICH	NIAGARA FALLS	A-193				X		BOD, SS
BLACKSTONE INDUSTRIAL PRODUCTS	STRATFORD	A-121	X	X				
BOISE CASCADE LTD. (FORT FRANCES)	FORT FRANCES	A-5		x				BOD
BOISE CASCADE LTD. (KENORA)	KENORA	A-7					X	SS
BORG-WARNER CHEMICALS LTD.	COBOURG	A-195			X	X		SS, PHOSPHORUS
CAMPBELL SOUP COMPANY LTD.	ST MARYS	A-123						BOD, SS
CANADIAN CANNERS LTD.	ST. DAVID	A-197						SS
CANADIAN INDUSTRIES LTD.	CORNWALL	A-271	X	X				
CANADIAN INDUSTRIES LTD.	COURTRIGHT	A-125	X	X				
CANADIAN OXY-DUREZ	FORT ERIE	A-199						PHENOLICS
CELANESE CANADA LTD.	ERNESTOWN TWP.	A-201					X	BOD, COD, SS
CHAMPLAIN INDUSTRIES LTD.	TARA	A-51	x	x				
CHESAPEAKE AND OHIO RAILWAY CO. LTD.	ST. THOMAS	A-127	X	X				
CORBY DISTILLERIES LIMITED	CORBYVILLE	A-203	X	X				
COURTAULDS LTD.	CORNWALL	A-273					X	BOD
CYANAMID CANADA LTD.	NIAGARA FALLS	A-205	X	X				
CYANAMID CANADA LTD. (WELLAND PLANT)	NIAGARA FALLS	A-207						BOD, PHOSPHORUS, SS, AMMONIA
DENISON MINES LTD. (0001680008)	ELLIOT LAKE	A-53	X	X				
DENISON MINES LTD. (0001680107)	ELLIOT LAKE	A-55		x				SS
DENISON MINES LTD. (0001680206)	ELLIOT LAKE	A-57		x				pH
DOFASCO INC	HAMILTON	A-209		X			X	PHENOLICS, SS
DOME MINES LIMITED.	SOUTH PORCUPINE	A-9		X				CYANIDE
DOMTAR CHEMICALS LTD. CDC DIVISION	ORILLIA	A-59	X	X				
DOMTAR CHEMICALS LTD.	GODERICH	A-61	NO REQUIREMENT			X		
DOMTAR CONSTRUCTION MATERIALS LTD.	THOROLD	A-211						BOD
DOMTAR FINE PAPERS	CORNWALL	A-275	X	X			X	

TABLE 2
1985 COMPLIANCE SUMMARY

COMPANY NAME	LOCATION	PAGE NUMBER	IN COMPLIANCE MONTHLY	IN COMPLIANCE ANNUAL	COMPANY INSTITUTING CONTROLS	SEE COMPANY SHEET	CONTROL ORDER REQUIRES FURTHER REDUCTIONS	PARAMETERS IN EXCEEDANCE OF MINISTRY GUIDELINES
DOMTAR FINE PAPERS	ST. CATHARINES	A-213			X			BOD
DOMTAR PACKAGING LTD.	TRENTON	A-215		X				BOD, SS
DOMTAR PACKAGING LTD.	RED ROCK	A-29	X	X			X	
DOMTAR WOOD PRESERVING LTD.	TRENTON	A-217			X	X	X	PHENOLICS, PENTACHLOROPHENOL
DOW CHEMICAL CANADA LTD.	SARNIA	A-129	X	X				
DUPONT CANADA INC. (TETRA ETHYL LEAD)	MAITLAND	A-277				X		LEAD
DUPONT CANADA INC. (NYLON INTERMEDIATES)	MAITLAND	A-279		X				SS
DUPONT CANADA INC.	CORUNNA	A-131		X		X		PHENOLICS
DUPONT CANADA INC. (NIPISSING WORKS)	NORTH BAY	A-63	X	X				
DUPONT CANADA INC.	KINGSTON TWP	A-219	X	X				
E. B. EDDY FOREST PRODUCTS LTD.	ESPANOLA	A-65	X	X				
E. B. EDDY FOREST PRODUCTS LTD.	OTTAWA	A-291		X			X	BOD
ELDORADO NUCLEAR LTD.	PORT HOPE	A-221	X	X				
ELDORADO NUCLEAR LTD.	PORT GRANBY	A-223				X		ARSENIC, pH
ELDORADO NUCLEAR LTD.	WELCOME	A-225			X	X		ARSENIC
ELDORADO RESOURCES LTD.	BLIND RIVER	A-67	X	X				
ESSO CHEMICALS CANADA LTD.	SARNIA	A-133		X		X		SS
ESSO PETROLEUM CANADA	SARNIA	A-135	X	X				
ETHYL CANADA INC.	CORUNNA	A-137		X		X		LEAD
EXOLON	THOROLD	A-227				X		SS
FALCONBRIDGE LTD.	FALCONBRIDGE	A-69		X				IRON
FALCONBRIDGE LTD. (MOOSE LAKE)	FALCONBRIDGE	A-71		X				SS
FALCONBRIDGE LTD. ONAPING MINE	ONAPING FALLS	A-73						SS
FIBERGLAS CANADA LTD.	SARNIA	A-139		X		X		PHENOLICS
FLEET MANUFACTURING COMPANY LTD.	FORT ERIE	A-229			X	X		CHROMIUM, SS
FORD MOTOR COMPANY OF CANADA LTD.	OAKVILLE	A-233				X		BOD, PHENOLICS, SS
FORD MOTOR COMPANY OF CANADA LTD.	NIAGARA FALLS	A-231			X			PHOSPHORUS, SS
FORD MOTOR COMPANY OF CANADA LTD.	ST. THOMAS	A-143		X	X	X		SS
FORD MOTOR COMPANY OF CANADA LTD.	WINDSOR	A-141				X		PHENOLICS, SS
FRASER INC.	THOROLD	A-235						BOD, SS
GAY LEE FOODS COOPERATIVE LTD.	TEESWATER	A-75	X	X				
GENERAL CHEMICAL CANADA INC.	AMHERSTBURG	A-145		X				pH
GENERAL MOTORS OF CANADA LTD.	ST. CATHARINES	A-237		X		X		PHENOLICS, SS
GNB BATTERIES CANADA LTD.	FORT ERIE	A-239				X		LEAD, SS,pH
GREAT LAKES FOREST PRODUCTS LTD.	THUNDER BAY	A-31		X			X	PHOSPHORUS, SS
GREAT LAKES FOREST PRODUCTS LTD.	DRYDEN	A-11		X		X		SS
H. J. HEINZ COMPANY OF CANADA LTD.	LEAMINGTON	A-147			X			BOD, SS
INCO LTD. (COPPER CLIFF CREEK NICKEL REF.)	SUDBURY	A-79		X				NICKEL, pH

			TABLE 2					
		1985	COMPLIANCE S	UMMARY				
COMPANY NAME	LOCATION	PAGE NUMBER	IN COMP MONTHLY	LIANCE ANNUAL	COMPANY INSTITUTING CONTROLS	SEE COMPANY SHEET	CONTROL ORDER REQUIRES FURTHER REDUCTIONS	PARAMETERS IN EXCEEDANCE OF MINISTRY GUIDELINES
INCO LTD. ((COPPER CLIFF CREEK WASTEWATER TR)	SUDBURY	A-17		X				IRON, NICKEL, pH
INCO LTD. (CREAN HILL)	SUDBURY	A-81		X				pH, NICKEL
INCO LTD. (FROOD STOBIE EMERG. TAILINGS AREA)	SUDBURY	A-83						SS, pH
INCO LTD. (GARSON MINE)	SUDBURY	A-85		X				pH, SS
INCO LTD. (LEVAK TAILINGS AREA)	SUDBURY	A-87		X				AMMONIA, pH, SS
INCO LTD. (NOLIN CREEK)	SUDBURY	A-89						AMMONIA, COPPER, IRON, NICKEL, pH,SS
INCO LTD. SULPHUR PRODUCTS DEPT.	SUDBURY	A-91						IRON, NICKEL, pH, SS
INCO METALS LTD.	SHEBANDOWAN	A-33	X	X				
INCO METALS LTD.	PORT COLBORNE	A-149		X				NICKEL, SS
INTERNATIONAL MINERALS AND CHEMICALS	DUNNVILLE	A-151				X		PHOSPHORUS
J. M. SCHNEIDER INC.	AYR	A-153			X	X		ALL PARAMETERS LISTED
JAMES RIVER MARATHON LTD.	MARATHON	A-35	X	X			X	
KERR ADDISON MINES LIMITED.	VIRGINIATOWN	A-293						ARSENIC, CYANIDE, COPPER, NICKEL, ZN
KIDD CREEK MINES LTD. (0000990002)	TIMMINS	A-13	X	X				
KIDD CREEK MINES LTD. (0000990101)	TIMMINS	A-15						ZINC
KIMBERLY CLARK OF CANADA LTD.	ST. CATHARINES	A-241						BOD
KIMBERLY CLARK OF CANADA LTD.	HUNTSVILLE	A-93	X	X				
KIMBERLY CLARK OF CANADA LTD.	TERRACE BAY	A-37	X	X			X	
KRAFT FOODS LTD.	INGLESIDE	A-281				X	X	BOD
LAC MINERALS (MACASSA DIV.)	KIRKLAND LAKE	A-297		X				CYANIDE, SS
MACMILLAN BLOEDEL LTD.	STURGEON FALLS	A-95			X	X	X	BOD
MITSUBISHI ELECTRONICS LTD.	MIDLAND	A-97	X	X			X	
NESTLE	CHESTERVILLE	A-295					X	BOD, PHOSPHORUS, SS
NITROCHEM INC.	MAITLAND	A-283			X			NITRATES, NITROGEN
NORANDA HEMLO INC.	MARATHON	A-39		X				pH
NORANDA MINES LTD. GECO DIVISION	MANITOUWADGE	A-41						SS
NORTON COMPANY	NIAGARA FALLS	A-243		X				SS, pH
OGILVIE MILLS	THUNDER BAY	A-43					X	BOD
OMSTEAD FOOD LTD.	WHEATLEY	A-155						BOD, PHOSPHORUS, SS
ONTARIO HYDRO (DOMESTIC TREATMENT)	TIVERTON	A-99	N/A	X		X		
ONTARIO HYDRO (HEAVY WATER PLANT)	TIVERTON	A-101	X	X				
ONTARIO HYDRO (THERMAL DATA STATIONS A AND B)	TIVERTON	A-103	X	X				
ONTARIO HYDRO (TGS)	NANTICOKE	A-159		X				SS
ONTARIO HYDRO (THERMAL DATA)	NANTICOKE	A-161	X	X				
ONTARIO HYDRO (TGS) (LAKEVIEW)	TORONTO	A-245	X	X				
ONTARIO HYDRO (TGS) (LAMBTON)	COURTRIGHT	A-157		X		X		
ONTARIO HYDRO (TGS) (THUNDER BAY)	THUNDER BAY	A-45	X	X				
PAMOUR PORCUPINE MINES - PAMOUR SITE	TIMMINS	A-17	X	X				

			TABLE 2					
COMPANY NAME	LOCATION	1985 PAGE NUMBER	COMPLIANCE S IN COMP MONTHLY	UMMARY LIANCE ANNUAL	COMPANY INSTITUTING CONTROLS	SEE COMPANY SHEET	CONTROL ORDER REQUIRES FURTHER REDUCTIONS	PARAMETERS IN EXCEEDANCE OF MINISTRY GUIDELINES
PAMOUR PORCUPINE MINES, SCHUMACHER DIVISION	TIMMINS	A-19						COPPER
PETRO CANADA PRODUCTS LTD. (FORMERLY GULF CAN.)	MISSISSAUGA	A-249				X		OIL & GREASE, PHENOLICS, SS
PETRO CANADA PRODUCTS LTD.	OAKVILLE	A-247				X		AMMONIA, PHENOLICS, SS
PETROSAR LTD.	SARNIA	A-163		X		X		PHENOLICS
POLYSAR LTD.	SARNIA	A-165	X	X				
REICHHOLD CHEMICALS LTD.	THUNDER BAY	A-47				X		PHENOLICS, SS
RIO ALGOM LTD. (PANEL MILL)	ELLIOT LAKE	A-105	X	X				
RIO ALGOM LTD. (QUIRKE MILL)	ELLIOT LAKE	A-107						IRON, SS
RIO ALGOM LTD. (STANLEIGH MILL)	ELLIOT LAKE	A-109		X				IRON
SHELL CANADA LTD.	CORUNNA	A-167	X	X		X		
SHERMAN MINE	TEMAGAMI	A-111	X	X				
SOHIO	NIAGARA FALLS	A-251		X				SS
SPRUCE FALLS POWER AND PAPER CO. LTD.	KAPUSKASING	A-21	X	X			X	
ST. MARYS PAPER INC.	SAULT STE. MARIE	A-113	X	X				
STANLEY HARDWARE, DIV. OF STANLEY CANADA INC.	NEW HAMBURG	A-169			X	X		CYANIDE, NICKEL, SS, ZINC
STELCO INC.	HAMILTON	A-253			X		X	PHENOLICS, SS, IRON
STELCO INC. LAKE ERIE WORKS	NANTICOKE	A-171				X		BOD, IRON, LEAD, SS
STELCO PAGE HERSEY WORKS	WELLAND	A-255	X	X				
STELCO WELLAND TUBE WORKS	WELLAND	A-257		X				IRON
STRATHCONA PAPER COMPANY	CAMDEN EAST TWP.	A-259	X	X			X	
SUNCOR SUNOCO GROUP	SARNIA	A-175		X		X		PHENOLICS
TEND-R-FRESH LTD. (DIV. OF MAPLE LEAF MILLS)	PETERSBURG	A-177			X	X		BOD, OIL & GREASE, PHOSPHORUS, SS
TEXACO CANADA LTD.	PORT CREDIT	A-261				X		PHENOLICS, SS
TEXACO CANADA LTD. (NANTICOKE REFINERY)	JARVIS	A-179	X	X				
THE ALGOMA STEEL CORPORATION LTD.	SAULT STE. MARIE	A-115	NO REQUIREME	NT			X	
THE ALGOMA STEEL CORP. LTD. (ORE DIV.)	WAWA	A-49	X	X		X		
THE CANADA STARCH CO. LTD.	CARDINAL	A-285					X	COD, SS
THE CANADIAN SALT COMPANY LTD.	WINDSOR	A-181		X				SS
THE ONTARIO PAPER COMPANY INC.	THOROLD	A-263	X	X				
TRENT VALLEY PAPERBOARD MILLS	TRENTON	A-265					X	BOD, SS
UNION CARBIDE CANADA LTD.	CORUNNA	A-183				X		SS
WASHINGTON MILLS LTD.	NIAGARA FALLS	A-267		X				SS
WICKES MANUFACTURING CO. LTD	WINDSOR	A-185			X	X		NICKEL, SS
FOOTNOTE								
N/A - NOT APPLICABLE								
AMEROCK INC. (IN 1984 INVENTORY)	MEAFORD		DISCHARGE IN	TO MUNICIPAL	SEWER			
SILKNIT LTD. TEXTILE DIVISION	CAMBRIDGE		PLANT CLOSED					
INTERNATIONAL MINERALS AND CHEMICALS	DUNNVILLE		PRODUCTION	STOPPED JULY	1984, TREATM	ENT SYSTEM	KEPT OPERATIONAL	

5.0 TRENDS

The 1985 report continues to report the trends for the same three sectors shown in the 1984 IJC report.

The progress of petroleum refineries, the pulp and paper industry and the steel industry are summarized on pages 20 to 26, 27 to 34 and 35 to 39 respectively. Readers may wish to refer to the subsequent section, Pollutants and their Significance (Appendix F) when reviewing the data.

5.1 PETROLEUM REFINERIES STATUS

Petroleum refineries essentially separate and combine some of the hydrocarbons found in crude oil by using heat and catalysts. Non-contact cooling water is necessary to condense and cool products separated by distillation.

Over 90% of the effluent can be non-contact cooling water from a petroleum refinery. However, it is possible to have a leakage into the cooling water so that the cooling water is more polluted than the treated wastewater. New petroleum refineries like Texaco at Nanticoke and Petrosar at Sarnia, discharge very little cooling water because air coolers and cooling water recycling (cooling towers) are used. The effluent from the newer refineries also contains fewer trace contaminants than the older refinery effluents.

TABLE 3
Petroleum Refineries Effluent Volumes

Old/ New	Company/Location	Barrels per day Nominal Capacity	Effluent in cubic metres/day	Effluent to Capacity Ratio
Old	Gulf at Clarkson	62,000	16,280 (process only)	
Old	Shell at Corunna	70,000	234,700	3.353
Old	Petro Canada at Oakville	75,000	3,913 (process only)	
Old	Esso at Sarnia	120,000	215,700	1.798
Old	Suncor at Sarnia	85,000	119,000	1.488
New	Texaco at Nanticoke	105,000	6,810	0.068
New	Petrosar at Sarnia	100,000	6,580	0.066

The large effluent volumes reflect the use of once-through cooling water at older refineries. When treated process wastewaters and non-contact cooling waters are combined, pollutants are diluted and become difficult to detect. On the other hand total water use and pollutant discharges - raw and treated - are much reduced for new plants.

Small flows of wastewater that contain high concentrations of sulphides or ammonia are stripped (typical removal efficiencies of 99% and 80-90%, respectively) before discharge to the effluent treatment system. The treatment systems are designed to handle storm runoff and ship ballast water on a batch basis.

All the petroleum refineries have effluent treatment systems that consist of two primary stages, intermediate storage, neutralization, secondary treatment and biomass removal. The treatment systems are comparable to those required by the U.S. EPA. The quality of treated effluent from the petroleum refineries is judged by five parameters - Phenolics (4-amino-antipyrine phenols), Ammonia - Nitrogen, Total Suspended Solids, Oil and Grease and the federal petroleum fish lethality test. Ontario petroleum refineries usually meet all these limits - Ontario maximum concentrations, Environment Canada production rate allowables, and even U.S. E.P.A. category (process configuration, product line and production rate) limits.

To assist the Ministry in its assessment of trace contaminants, Esso Petroleum, Shell Canada, Suncor Sunoco, and Texaco Canada had their treated effluent analyzed in 1985. The results were comparable to previous U.S. and Canadian studies.

In the United States, the Environmental Protection Agency (Federal Register, Volume 47, No. 201, Monday, October 18, 1982, Rules and Regulation) decided not to set priority pollutant limits for the petroleum refineries. Prior to this decision, EPA analyzed the treated effluent from seventeen refineries for priority pollutants. Although EPA's priority pollutant list

TABLE 4
Petroleum Refineries Comparison of Allowables and Actuals; Ontario, Environment Canada, U.S. EPA
(unless indicated otherwise, units are kg/day)

July 1985

REFINERY- POLLUTANT	GULF	ESSO	PETROSAR	PETROCANADA	SHELL	SUNCOR	TEXACO
Total Suspended Solids (biological solids, insoluble oil, clay)							
Actual	151.1	182.7	58	107.8	559	247	3.1
Ontario (15 ppm)	(14.0)	(13.9)	(8)	(20.6)	(12.7)	(8)	(1.39)
Env. Canada	415.6	694	173.8	301.7	476	322	327.3
US EPA	128.8	408	125.9	166.6	144.3	144.2	209
PHENOLICS							
Actual	0.13	0.5	0.03	0.11	0.11	0.30	0.005
Ontario (.02 ppm)	(0.012)	(0.006)	(0.005)	(0.021)	(0.0016)	.005	(0.002)
Env. Canada	17.3	38.9	7.2	12.6	6.1	13	13.6
US EPA	1.04	3.3	1.02	1.35	1.17	1.17	1.69
AMMONIA - NITROGEN							
Actual	29.1	31.7	8.0	50	0	33	0.06
Ontario (10 ppm)	(2.7)	(1.6)	(2)	(9.6)	(0.11)	(0.6)	(0.028)
Env. Canada	142.4	241	86.9	108.7	158	118	163.6
US EPA	58.3	190	57.0	73.4	65.3	65.3	87.1
OIL AND GREASE							
Actual	100.2	30.9	5.0	4.9	36.7	20.0	0.164
Ontario (10 ppm)	(9.3)	(3.6)	(0.81)	(0.95)	(1.6)	(0.6)	(0.076)
Env. Canada	173.0	389.0	72.4	125.7	198.0	134	136.3
US EPA	49.0	153	47.9	63.5	54.9	54.95	79.6
SULPHIDES							
Actual	0.30	2.55	N/A	3.27	[illegible]	0.2	0.123
Ontario (none)	0.028	N/A	N/A	N/A	N/A	N/A	N/A
Env. Canada	5.8	9.64	2.4	4.18	6.6	2.05	4.5
US EPA	0.85	2.7	0.84	1.08	0.96	0.96	1.39
Monthly Federal Fish Test for 1985	12 passes	12 passes	12 passes	10 of 12 passes	12 passes	12 passes	12 passes

Note:
- the Ministry's requirements are in parts per million concentrations;
- Environment Canada has 3 different allowable limits for each pollutant; the most stringent, the monthly average limit, has been provided by Environment Canada, Ontario Region.
- US EPA has five categories reflecting the refinery product line such as petrochemical (Petrosar) and integrated (Shell, Suncor, Texaco). The production rate and categories are used to determine the allowables; 30 day average limits were used.

N/A - Not available.

TABLE 5
PETROLEUM REFINERIES STATUS
(ALL LOADINGS IN KILOGRAMS PER DAY)

	TOTAL SUSPENDED SOLIDS				
	1981	1982	1983	1984	1985
ESSO CANADA @ SARNIA	322	276.0	(0)*	290.0	418.0
GULF @ CLARKSON	235	210.0	226.0	341.0	158.0
PETRO CANADA @ OAKVILLE	39	31.1	60.2	54.6	71.8
PETROSAR @ CORUNNA	209	133.0	106.0	70.2	43.7
SHELL @ CORUNNA	865	309.0	(0)*	(0)*	767.0
SHELL @ OAKVILLE	48.8	40.3	50.6	CLOSED	CLOSED
SUNCOR @ SARNIA	347	393.0	67.3	255.0	416.0
TEXACO @ NANTICOKE	7.8	5.1	9.6	9.4	4.5
TOTALS	2074	1398.0	520.0	1020.0	1879.0

	PHENOLICS				
	1981	1982	1983	1984	1985
ESSO CANADA @ SARNIA	1.80	1.90	.68	.60	.70
GULF @ CLARKSON	3.50	2.80	.22	1.41	1.07
PETRO CANADA @ OAKVILLE	.12	.08	.12	.17	.18
PETROSAR @ CORUNNA	.80	1.31	.40	.43	.10
SHELL @ CORUNNA	.60	.51	.72	.42	.35
SHELL @ OAKVILLE	.04	.03	.04	CLOSED	CLOSED
SUNCOR @ SARNIA	3.10	1.90	.77	1.08	.67
TEXACO @ NANTICOKE	.04	.04	.12	.04	.02
TOTALS	10.00	8.57	3.07	4.16	3.10

* INTAKE EXCEEDED DISCHARGE

TABLE 5 (continued)

PETROLEUM REFINERIES STATUS

(ALL LOADINGS IN KILOGRAMS PER DAY)

	AMMONIA-NITROGEN				
	1981	1982	1983	1984	1985
ESSO CANADA @ SARNIA	116.0	83.0	81.0	56.00	24.70
GULF @ CLARKSON	29.7	54.7	33.2	50.50	21.50
PETRO CANADA @ OAKVILLE	19.0	29.8	29.1	48.00	50.10
PETROSAR @ CORUNNA	53.4	39.9	14.5	19.50	14.50
SHELL @ CORUNNA	15.4	16.5	(0)*	4.80	6.45
SHELL @ OAKVILLE	36.8	13.7	23.0	CLOSED	CLOSED
SUNCOR @ SARNIA	42.0	49.0	30.3	31.10	23.30
TEXACO @ NANTICOKE	.6	2.1	13.6	3.26	1.28
TOTALS	313.0	229.0	225.0	213.00	141.80

	OIL AND GREASE				
	1981	1982	1983	1984	1985
ESSO CANADA @ SARNIA	142.0	131.0	10.0	176.00	113.0
GULF @ CLARKSON	223.0	232.0	223.0	311.00	91.1
PETRO CANADA @ OAKVILLE	5.2	2.4	6.0	6.92	5.7
PETROSAR @ CORUNNA	9.0	6.0	18.1	10.40	11.1
SHELL @ CORUNNA	56.7	58.7	72.1	88.00	117.0
SHELL @ OAKVILLE	15.5	7.3	12.4	CLOSED	CLOSED
SUNCOR @ SARNIA	41.0	40.4	24.3	94.30	44.1
TEXACO @ NANTICOKE	5.5	2.9	6.6	6.73	2.1
TOTALS	497.0	481.0	372.0	693.00	384.1

* INTAKE EXCEEDS DISCHARGE

YEAR	1980	1981	1982	1983	1984	1985
PRODUCTION BBLS/DAY	574000	633000	502000	519000	-	514337

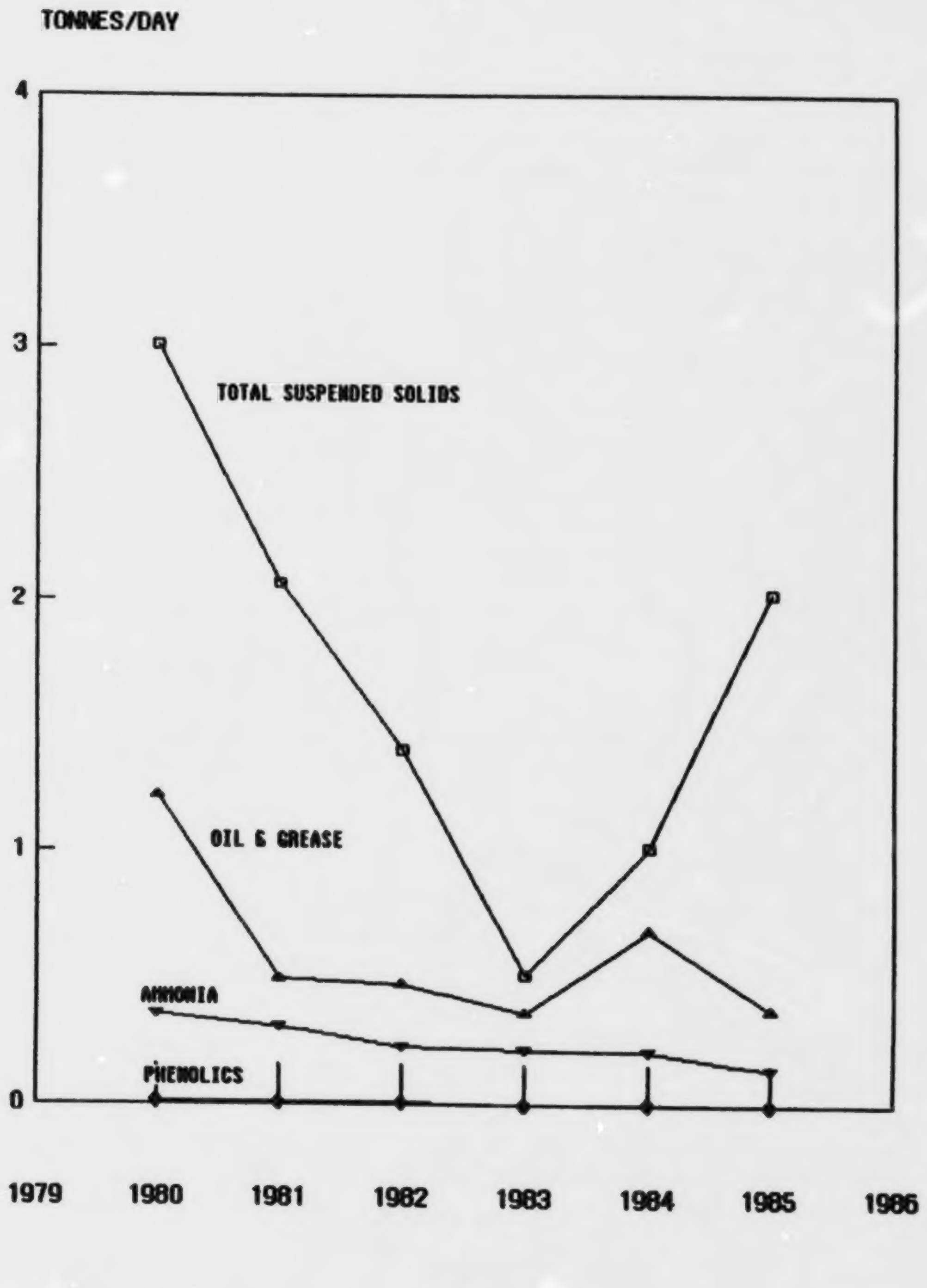
1967 TOTALS (KILOGRAMS/DAY)	
AMMONIA	2320
SUSPENDED SOLIDS	-
OIL AND GREASE	4110
PHENOLICS	102

FIGURE 1

PETROLEUM REFINERIES SECTOR STATUS

FOUR MAJOR PARAMETERS

ONTARIO



identified 129 compounds, the treated effluent was analyzed for over 300 compounds; 12 metals and 18 organics were identified and quantified at the ppb range. Moreover, EPA concluded that properly operated treatment systems and in particular, the biological section, reduced priority pollutants to the trace level. Thus, in EPA's judgement, good treatment resulting in the discharges of conventional pollutants consistently below the allowable limits assures control of trace toxic compounds. For refineries, individual U.S. State agencies have set an aromatics monitor and report requirement in their permits.

5.1.1 Total Suspended Solids

Although the refineries were below requirements, four reported an increase in suspended solids discharges since 1984, while three reported a decrease. Total discharges doubled (from 1020 kilograms per day to 2034 per day) from 1984 to 1985.

5.1.2 Phenolics

Five of the seven refineries reported a drop in discharges of phenolics since 1984 and two reported an increase. Total discharges of phenolics decreased from 4.16 kilograms per day in 1984 to 3.1 kilograms per day in 1985.

5.1.3 Ammonia-nitrogen

Five plants reported a decrease in ammonia-nitrogen discharges and two reported an increase. The total discharges in 1985 (141.8 kilograms) were 71.2 kilograms per day lower than the total for 1984 (213 kilograms).

5.1.4 Oil and Grease

Oil and grease discharges were lower for five of the seven refineries in 1985 than they were in 1984. The other two refineries discharged more. Total discharges decreased by 308.9 kilograms per day (384.1 kilograms compared to 693 kilograms) over 1984.

5.2 PULP AND PAPER INDUSTRY STATUS

The 1968 OWRC objectives proposed for this industry still apply. The quality of the effluent is judged by three pollutant parameters - Total Suspended Solids, Biochemical Oxygen Demand (BOD) and the acute fish toxicity test.

The industry consists of chemical pulping mills (kraft, sulphite), mechanical pulping mills (stone groundwood, thermo-mechanical, chemi-mechanical, etc.), papermaking mills, (no pulping at all), deinking mills (used paper) and recycling mills (clean used paper). Eight of twenty-eight mills discharge into drainage basins other than the Great Lakes.

The pulp and paper industry has reduced significantly the Total Suspended Solids (bark, wood fines, knots, fibre). All mills have primary treatment to control TSS. Only 7 mills in Ontario have some form of secondary treatment.

Biological treatment not only reduces biodegradable organics but absorbs some non-degradable compounds in the biomass as well. Biological treatment systems can be misused as a waste receptor by allowing spilled material into the system; these spills can kill the microorganisms essential for the biodegrading of organics. Good in-plant control and trained operators are essential for the proper operation of biological treatment processes.

The Ministry is considering the U.S. approach to setting a limit on organic compounds in effluent as measured by the BOD test. Table 6 provides a comparison of the actual discharges with various requirements. The U.S. EPA value is the calculated BOD limit achievable by secondary treatment or its equivalent. Such systems reduce the biodegradable load discharged to a water body.

Federal allowables, whether they be by regulation or guideline, are related to a process building block. The allowable for each building block is related to the production rate in the block. The individual allowables are summed. Using 1985 production rate, the federal allowables have been calculated and are shown in Table 6.

TABLE 6
Pulp and Paper Comparison - Actual, Ontario, Environment Canada, US EPA
(in tonnes per day)

Company	Biochemical Oxygen Demand				Total Suspended Solids			
	Act.	Ont.	E.C.	EPA	Act.	Ont.	E.C.	EPA
Abitibi-Price Iroquois Falls	47.6	69.0	37.0	5.3	5.3	9.1	11.3	8.0
Abitibi-Price Smooth Rock Falls	7.8	10.0	15.7	1.7	2.4	4.5	4.5	2.9
Abitibi-Price Bare Pt. Thunder Bay	19.0	24.5	19.5	4.4	1.26	2.0	6.3	4.6
Abitibi-Price Ft. William Thunder Bay	8.6	14.5	11.2	0.8	1.2	2.5	4.3	1.4
Abitibi-Price Provincial Thunder Bay	4.0	7.3	6.4	0.8	1.8	2.5	5.5	1.0
Beaver Wood Fibre Thorold	3.0	2.5	2.2	0.6	1.6	0.9	2.1	0.6
Boise Cascade Ft. Frances	12.1	10 -15	34.0	3.8	6.1*	7.5	16.7	6.4
Boise Cascade Kenora	25	44.0	25.8	3.9	8.7	6 -12	8.4	5.9
Domtar Fine Paper Cornwall	17.1	27.7	27.7	1.8	9.4	-	17.3	2.5
Domtar Packag. Red Rock	17.8	23.0	25.5	1.7	4.4	5.5	6.0	2.7
Domtar Fine Paper St. Catharines	0.49	0.35	1.2	0.3	0.24	-	2.2	0.4
Domtar Construct. Thorold	0.76	0.45	0.8	0.08	0.37	-	0.6	0.12
Domtar Packag. Trenton	5.3	5.5	5.5	0.4	0.59	1.1	1.1	0.6
E.B. Eddy Espanola	2.7	-	35.9	9.1	5.3*	-	10.6	9.1

TABLE 6 (continued)
Pulp and Paper Comparison - Actual, Ontario Environment Canada, US EPA
(in tonnes per day)

Company	Biochemical Oxygen Demand				Total Suspended Solids			
	Act.	Ont.	E.C.	EPA	Act.	Ont.	E.C.	EPA
E.B. Eddy Ottawa	1.0	1.2	1.2	0.4	0.6	0.8	2.2	0.3
Fraser Thorold	2.1	1.8	3.9	0.6	1.0	1.5	4.6	0.5
Great Lakes FP Dryden	2.8	-	22.0	3.9	5.0*	5.6	11.7	6.6
Great Lakes FP Thunder Bay	46.3	77.7	77.7	11.9	13.3	14.0	27.6	19.3
James River Marathon	13.2	-	22.5	2.6	4.5	9.0	3.9	4.5
Kimberly-Clark Huntsville	0.008	-	0.80	0.35	0.001	-	0.77	0.27
Kimberly-Clark St. Catharines	0.5	0.36	0.79	0.32	0.05	0.36	0.93	0.24
Kimberly-Clark Terrace Bay	34.9	42.7		5.9	5.8	8.5		10.4
MacMillan Bloedel Sturgeon Falls	41.8	10.0	16.8	2.1	2.4	3.3	2.4	1.6
Ontario Paper Thorold	12.8	18.1	34.1	4.1	5.2	6.8	9.8	6.4
Paperboard Ind. Glen Miller	1.8	-	2.2	0.4	2.2	0.14	1.7	0.5
Spruce Falls Kapuskasing	25.2	40.0	42.4	4.6	7.4	12.9	13.0	7.2
St. Mary's Paper Sault Ste. Marie	3.6	-	5.2	0.6	3.2	4.6 -5.7	5.3	0.8
Strathcona Paper Strathcona	0.3	-	1.2	0.2	0.1	-	1.1	0.3

E.C. = Environment Canada; 1971 Guideline limits used; assumed limit where there is a gap.
EPA = Environmental Protection Agency; New Source Performance Standard limits used.
Ont. = Ontario Requirement
Act. = Actual Annual Discharge
TSS in Ontario are bark, wood, fibre, clay, etc; in USA and * are biomass.

FIGURE 2

PULP & PAPER SECTOR STATUS

TWO MAJOR PARAMETERS

ONTARIO

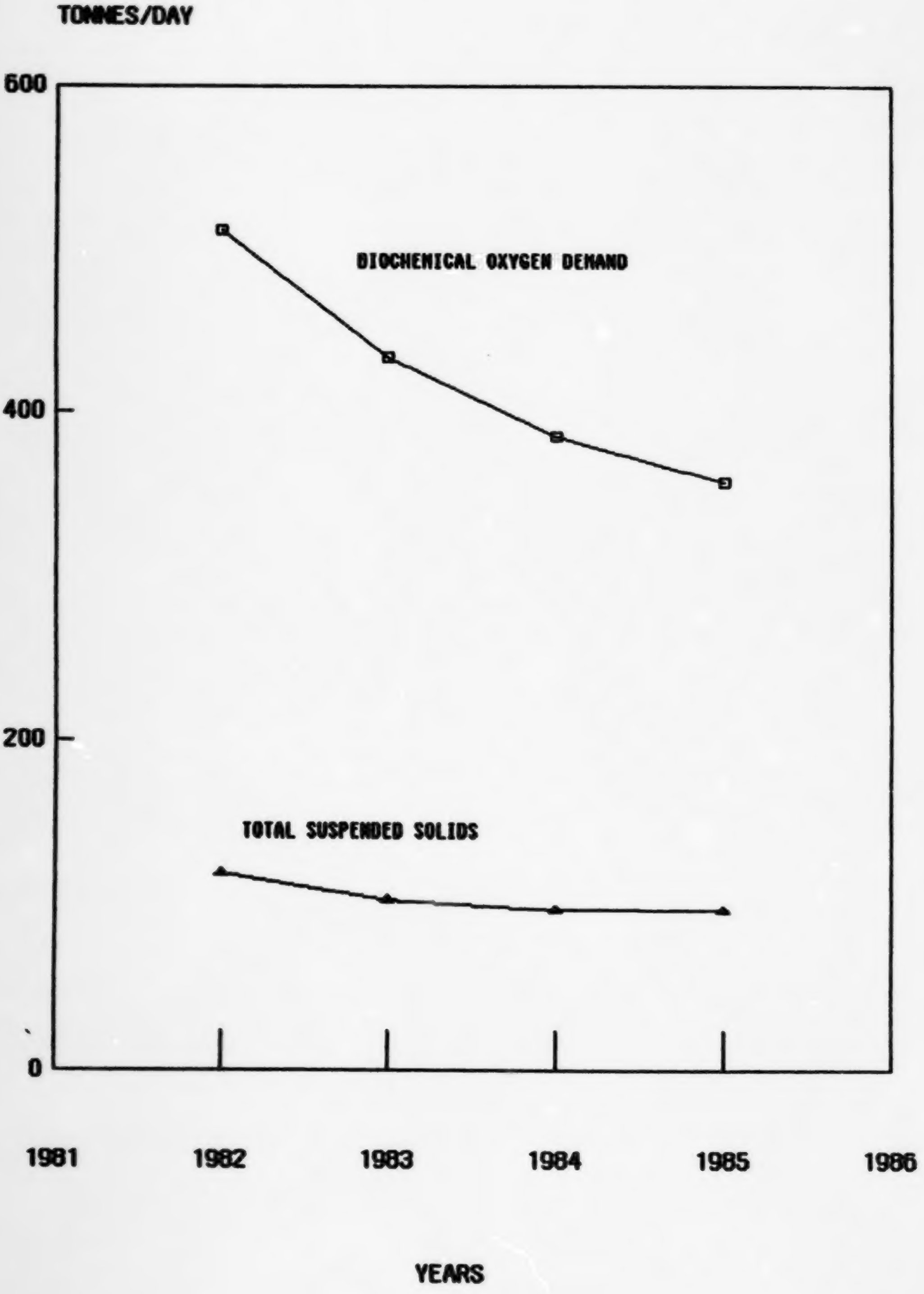


TABLE 7
PULP AND PAPER INDUSTRY STATUS
(all data in tonnes per day)

	TOTAL SUSPENDED SOLIDS				BIOCHEMICAL OXYGEN DEMAND			
	1982	1983	1984	1985	1982	1983	1984	1985
GREAT LAKES BASIN								
ABITIBI-PRICE INC.								
PROVINCIAL PAPERS	1.00	1.70	1.76	1.82	3.20	3.70	3.75	3.95
FORT WILLIAM	1.30	1.30	1.18	1.20	11.20	8.10	9.02	8.60
THUNDER BAY	1.00	1.10	1.15	1.26	19.80	17.90	19.60	19.00
BEAVER WOOD @ THOROLD	.78	1.86	1.43	1.60	2.00	2.50	3.91	3.00
DOMTAR CONSTRUCTION @ THOROLD	.18	.22	.31	.37	.40	.50	.63	.76
DOMTAR FINE PAPERS @ ST. CATHARINES	.37	.34	.27	.24	.77	.75	.71	.49
DOMTAR FINE PAPERS @ CORNWALL	10.50	10.90	8.68	9.40	13.30	16.10	19.00	17.10
DOMTAR PACKAGING* @ RED ROCK	4.40	5.00	4.32	4.40	16.90	16.50	17.70	17.80
DOMTAR PACKAGING @ TRENTON	.33	.40	.46	.59	3.60	4.50	5.04	5.34
EDDY FOREST* @ ESPANOLA	6.50	5.90	5.06	5.30	21.40	13.90	3.04	2.70
FRASER @ THOROLD	.95	.84	1.22	1.01	2.30	1.80	2.41	2.09
GREAT LAKES* @ THUNDER BAY	12.30	11.70	12.20	13.30	82.00	71.00	49.70	46.30
JAMES RIVER @ MARATHON	9.70	7.10	5.45	4.50	17.10	13.50	14.70	13.20
KIMBERLY CLARK* @ TERRACE BAY	7.10	6.50	6.72	5.80	32.00	36.10	36.00	34.90
KIMBERLY CLARK @ ST. CATHARINES	.21	.11	.05	.05	.52	.58	.34	.52

* MILLS HAVE EXPANDED SINCE 1977

TABLE 7 (continued)
PULP AND PAPER INDUSTRY STATUS
(all data in tonnes per day)

	TOTAL SUSPENDED SOLIDS				BIOCHEMICAL OXYGEN DEMAND			
	1982	1983	1984	1985	1982	1983	1984	1985
MacMILLAN BLOEDEL @ STURGEON FALLS	1.70	2.20	2.20	2.40	64.60	58.50	50.70	41.70
THE ONTARIO PAPER CO.* @ THOROLD	9.60	10.20	6.69	5.20	14.80	16.60	14.80	12.80
ST. MARYS PAPER @ SAULT STE. MARIE	12.60	3.40	2.53	3.20	6.30	5.90	4.80	3.60
STRATHCONA PAPER @ STRATHCONA	.045	.02	.06	.13	.52	.65	.69	.31
TRENT VALLEY PAPERBOARD @ TRENTON	.35	.28	.88	.14	.28	-	-	1.83
SUB-TOTAL	80.92	71.07	62.62	61.91	312.99	289.08	256.54	235.99
NON GREAT LAKES BASIN								
ABITIBI-PRICE, INC.								
IROQUOIS FALLS	4.50	5.23	5.60	5.30	53.60	44.52	45.70	47.60
SMOOTH ROCK FALLS	3.00	2.71	2.30	2.40	7.80	5.40	9.60	7.80
BOISE CASCADE CANADA LTD.								
FORT FRANCES	7.8	5.39	8.9	6.1	12.2	11.99	11.2	12.1
KENORA	6.8	6.63	6	8.7	33	38.68	30.4	25
E.B. EDDY FOREST PRODUCTS @ OTTAWA	1.52	.471	.56	.59	1.59	1.66	1.28	1.02
GREAT LAKES FOREST PRODUCTS @ DRYDEN	5.30	4.14	4.90	5.00	14.20	14.18	4.60	2.80
KIMBERLY CLARK @ HUNTSVILLE	.002	-	.008	.001	.012	-	.008	.008
SPRUCE FALLS POWER AND PAPER COMPANY @ KAPUSKASING	10.5	8.1	6.7	7.4	77.5	28	26.7	25.2
TOTALS	120.34	103.74	97.59	97.40	512.89	433.51	386.03	357.52

TABLE 7 (continued)
PULP AND PAPER INDUSTRY STATUS
(all data in tonnes per day)

	1967	1977	1980	1982	1983	1984	1985
SALEABLE PRODUCTION	7350	8219	9119	8552	9477	9932	**9008
							++3766

** Great Lakes Basin Only - estimated
++ Other Drainage Basins - estimated

1967 LOADINGS	
TOTAL SUSPENDED SOLIDS	375
BIOCHEMICAL OXYGEN DEMAND	610

1973 LOADINGS	
TOTAL SUSPENDED SOLIDS	126
BIOCHEMICAL OXYGEN DEMAND	470

In the U.S., the Environmental Protection Agency has set limits for thirty-three different types of pulp and paper mills. The limit is related to the production rate for each category. These category limits have been calculated and are also in Table 6. In the U.S., all mills have secondary or biological treatment of their effluent. EPA studied treated effluents for priority pollutants and set limits for two slimicides and zinc. If the slimicides and zinc components are not used, no limits are set.

Note that TSS from Ontario mills usually consist of bark, clay, wood and fibre, while TSS from U.S. mills are bacteria and biomass from the secondary treatment process. At three Ontario kraft mills, the TSS are biomass (Dryden, Espanola and Fort Frances mills) similar to that discharged by U.S. mills.

5.2.1 Total Suspended Solids

The total discharge of TSS for all of Ontario from the mills decreased for 1985 compared to 1984 by 190 kilograms per day to 97,400. Of the 28 pulp and paper plants included in the inventory (Table 7), 18 reported higher levels of suspended solids in 1985 over 1984, nine reported lower levels and one plant reported no change. Total suspended solids discharges to the Great Lakes Basin decreased by 1,910 kilograms per day between 1984 and 1985 (61,910 kilograms compared to 62,620).

5.2.2 Biochemical Oxygen Demand

The total discharge of BOD for all Ontario from the mills for 1985 decreased by 27,910 kilograms per day compared to 1984. Sixteen of the 28 plants reporting BOD levels indicated a decrease in 1985, eleven indicated an increase and one remained the same. The 1985 BOD levels decreased by 20,550 kilograms per day (235,990 kilograms in 1985 compared to 256,540 kilograms in 1984) for the sources discharging to the Great Lakes Basin.

5.3 STEEL INDUSTRY STATUS

Effluent quality for the primary steel producers is judged by four parameters: ammonia-nitrogen, phenols, total suspended solids and oil and grease. The rate of progress is somewhat fixed by the nature of steel producing technology - large batch operations, equipment that lasts forty years, etc. - and the cyclic market demand for steel products.

5.3.1 Ammonia

Three of the four companies listed (Table 8) reported a decrease in ammonia discharges over 1984 and one company reported an increase. Total ammonia discharges in 1985 were lower than 1984 discharges by 405 kilograms per day (4,755 kilograms compared to 5,160 kilograms).

5.3.2 Phenolics

Three companies reported a decrease in discharges of phenolics between 1984 and 1985; one, an increase. Total discharges of phenolics for 1985 were 16 kilograms per day lower than they were in 1984 (141 kilograms compared to 157 kilograms).

5.3.3 Suspended Solids

Two companies reported a decrease in suspended solids discharges between 1984 and 1985 and two reported an increase. The 1985 total was 8,565 kilograms per day lower than the 1984 total (36,335 kilograms compared to 44,900 kilograms).

TABLE 8
STEEL INDUSTRY STATUS
(all data in kilograms per day)

	AMMONIA				PHENOLICS			
	1982	1983	1984	1985	1982	1983	1984	1985
ALGOMA STEEL CORP. @ SAULT STE. MARIE	4230	3160	3490	4002	102.00	101.000	99.00	102.00
DOFASCO @ HAMILTON	1540	970	1140	592	48.00	16.000	14.60	8.04
STELCO @ HAMILTON	1630	570	525	156	115.00	69.000	43.00	31.40
STELCO @ NANTICOKE*	14	6	6	4.83	.06	.058	.07	.04
TOTALS	7410	4710	5160	4755	265.00	186.000	157.00	141.00

* NEW STEEL FACILITY BUILT IN 1979-1981

	SUSPENDED SOLIDS				OIL & GREASE			
	1982	1983	1984	1985	1982	1983	1984	1985
ALGOMA STEEL CORP. @ SAULT STE. MARIE	7170	7830	7760	8580	1510	1610	1570	1880
DOFASCO @ HAMILTON	16300	12500	18100	11800	200	210	464	837
STELCO @ HAMILTON	6700	12300	18800	15500	70	1370	3240	2170
STELCO @ NANTICOKE*	230	280	285	455	22	38	69	52.1
TOTALS	30400	32900	44900	36335	1790	3230	5340	4939.1

* NEW STEEL FACILITY BUILT IN 1979-1981

TABLE 8 (continued)
STEEL INDUSTRY STATUS
(all data in kilograms per day)

	CYANIDE				IRON			
	1982	1983	1984	1985	1982	1983	1984	1985
ALGOMA STEEL CORP. @ SAULT STE. MARIE	158	127.0	75.0	70.6	3250	3490	3490	4104
DOFASCO	22	39.0	31.3	21.1	-	2470	3550	3800
STELCO @ HAMILTON	70	99.0	152.0	46.5	3500	4630	5580	2750
STELCO @ NANTICOKE*	1	1.6	1.7	.19	13	23	17	22.9
TOTALS	251	267.0	260.0	138.39	-	10610	12600	10676.9

* NEW STEEL FACILITY BUILT IN 1979-1981

YEAR	1980	1982	1983	1984	1985
FINISHED PRODUCT IN TONNES	13,100,000	10,100,000	10,800,000	9,800,000	11,872,000

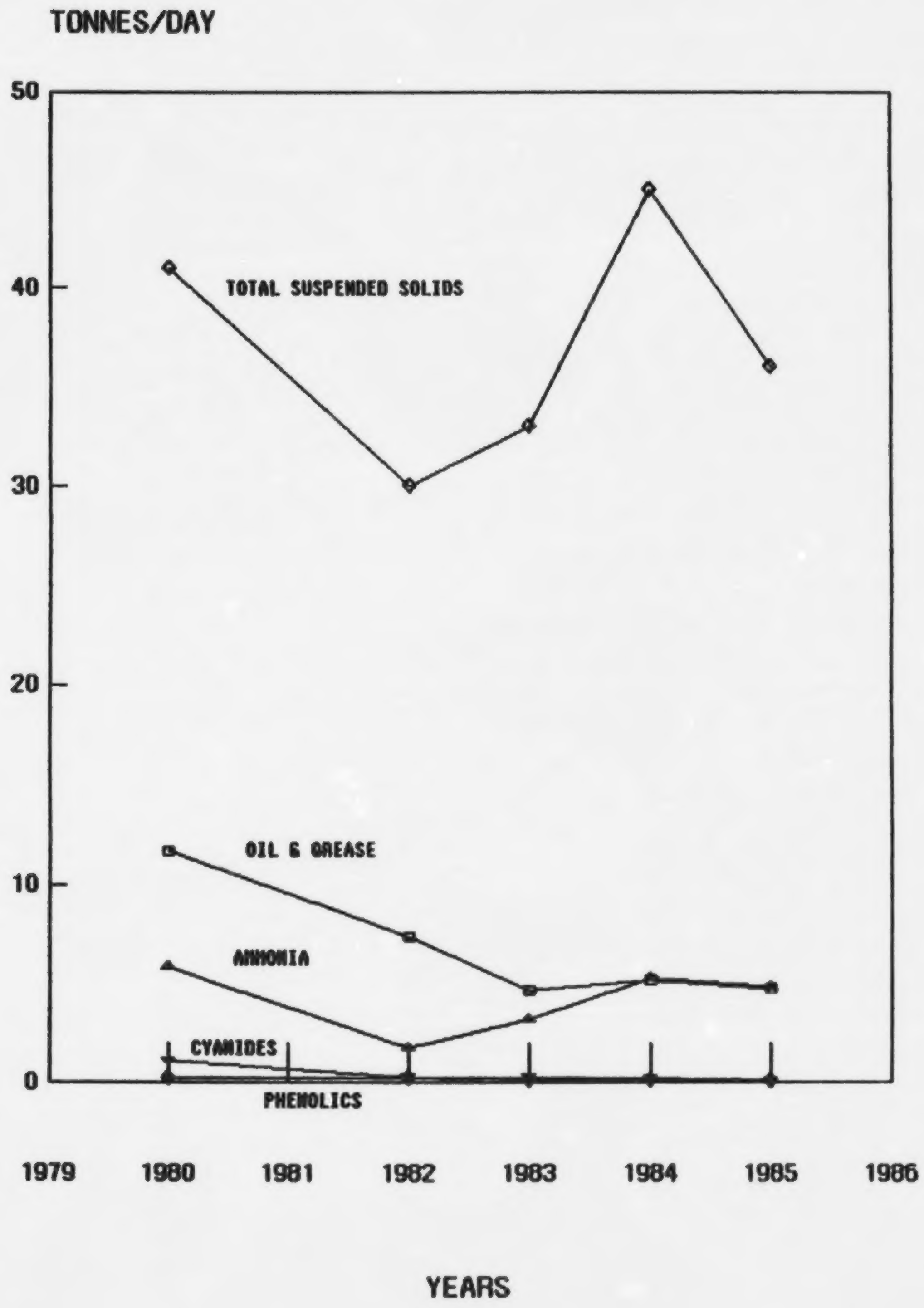
1967 TOTALS (KILOGRAMS/DAY)	
AMMONIA	23000
SUSPENDED SOLIDS	126000
PHENOLICS	2730
OIL & GREASE	30000
CYANIDE	2370

FIGURE 3

STEEL SECTOR STATUS

FIVE MAJOR PARAMETERS

ONTARIO



5.3.4 Oil and Grease

Two companies reported higher discharges of oil and grease in 1985 and two reported lower levels. The total discharge for 1985 was 400.9 kilograms per day lower than the 1984 total (4939.1 kilograms compared to 5,340 kilograms).

It is more difficult and much more costly for existing plants to remove pollutants. In general a smaller volume is easier to correct and control as shown in the following table. In existing steel plants, the wastewaters are not well segregated as to the type of pollutants; similar pollutants can best be treated by a specific process. Effective treatment of mixed pollutants and variable flows is costly.

Table 9 - Steel Effluent Volumes, 1985

Old/ New	Company/Location	Tonnes per year Nominal Capacity	Effluent cubic metres per day	Effluent to Production Capacity Ratio
Old	Stelco at Hamilton	5,261,650	1,183,000	0.225
Old	Dofasco at Hamilton	4,115,810	804,000	0.195
Old	Algoma Steel at Sault Ste. Marie	3,600,000	503,700	0.140
New	Stelco at Nanticoke	1,164,800	32,400	0.028

6.0 TOXICITY TESTING

Industrial effluents are often complex and contain variable mixtures of known and unknown compounds. Many of these compounds can cause adverse effects in fish and other important aquatic organisms. If present in the receiving waters at sufficiently high concentrations, these substances can result in lethal toxicity. Laboratory tests are used to indicate the lethal toxicity of an effluent before discharge into a water body.

The toxicity information in this report is compiled from data generated from the Ministry of the Environment Toxicity Laboratory in Rexdale and through contracts with Lakehead University in Thunder Bay. Test results on specific effluents are shown in Appendix A.

Acute toxicity tests provide information about the relative lethality of industrial effluents. The bioassays are designed to estimate the concentration of an effluent which is lethal to 50% of the test animals in a specific time. This concentration is estimated by exposing test organisms to a logarithmic series of effluent concentrations and observing time of death. In the majority of the bioassays, different sets of 10 rainbow trout fingerlings are transferred to each of 6 to 7 different concentrations of the test effluent as well as a control. The number of mortalities is recorded at various times during the 96 hours of the bioassay.

The unit of measurement of the short term bioassay is the median lethal concentration (LC-50) qualified as to the duration of the test. Thus, a 96 hour LC50 is an estimate of the concentration that would kill half the fish in 96 hours.

Why use rainbow trout as a test organism and why have the test duration set at 96 hours? Research has shown that the greatest mortality due to toxicants in trout occurs within 96 hours. Also, this 96-hour test period fits into a normal Laboratory work week. The rainbow trout (Salmo gairdneri), a coldwater fish, has been selected for its relative ease in culturing in a laboratory environment and for the extensive literature available on its sensitivity to pollutants. In comparison to the life span of the test animal, 96 hours of exposure to a toxicant is short. The expected life span for rainbow trout is four years.

Standards for the bioassay procedures, including such things as temperature control and volume of test solutions, were chosen to allow for reproducible results (more detailed information on test protocols can be obtained from the Ministry Toxicity Unit). Although a standard protocol is issued for most of the bioassays in the tables, modifications of the procedure are sometimes incorporated. Changes in bioassay procedures such as pH adjustment, aeration and others are sometimes used to develop a better understanding of the causes of toxicity or to better simulate receiving water conditions.

7.0 SELF MONITORING REQUIREMENTS AND AUDIT PROCESS

All the plants included in this report monitor their own discharges. At present, the vast majority of Ontario sources monitor their effluents on a voluntary basis, although recently a start has been made to specify monitoring requirements in Certificates of Approval. However Ontario Chloralkali plants must comply with the monitoring and reporting requirements of the Federal Chloralkali Regulations. To ensure that the self monitoring data are accurate, the Ministry of the Environment takes random audit samples.

Both the federal and Ontario agencies have monitoring and reporting requirements. While petroleum refineries and pulp and paper plants must comply with both federal and Ontario requirements, all other industries must comply only with Ontario monitoring requirements.

The following is a description of the Ministry's audit system for the pulp and paper mills in Ontario's Northwest Region. The pulp and paper mills from Marathon on Lake Superior to Dryden have audit samples taken usually twice a month.

The Northwest Region instituted a formal effluent auditing program in 1982. It has been modified several times since then, which is the reason for its present format.

Ideally, all pulp and paper mills take 24-hour composite samples at all outfalls. The concentrations of the measured parameters are recorded daily and reported to the Region on a monthly basis along with the flows at these specific outfalls. From the flows and concentrations, loadings are calculated. These data are then loaded into the Regional computer.

After collecting the 24-hour composite sample from each outfall, all companies are requested to put part of that sample into a Ministry of the Environment sample bottle to be available for an

Environmental Officer, should there be a visit to the industry that day. This is to eliminate allegations that industries are aware of when Ministry staff are to visit them. These samples are normally picked up on a minimum monthly basis and are analyzed by the Ministry laboratory.

On receipt of the analysis, the results are entered into the computer program and are compared to the concentration the company reported for that specific day. The program notes discrepancies.

If consistent discrepancies occur, the Environmental Officer normally arranges a meeting between the two laboratories responsible for the analysis. Up until now, this has eliminated consistent discrepancies.

The sample auditing program is being continuously improved by the Region. Companies are reminded to collect Ministry samples on a daily basis. Whenever possible, analyses are entered into the computer on a regular basis as soon as possible. New computer hardware, changes in the software and in the Regional laboratory information system, and additional staff are part of these improvements.

7.1 Enforcement Actions

A new Branch, Investigations and Enforcement, Operations Division, was formed and started in 1985. Regional staff refer incidents, etc., to this Branch for investigation with the possibility of follow-up by prosecution. In 1985, there were thirteen effluent prosecutions of eleven companies - two were withdrawn, seven are still before the courts and four resulted in convictions. Note that exceedance of a monthly average requirement does not necessarily mean that charges are laid.

TABLE 11
Enforcement Action in 1985

	COMPANY	OFFENCE DATE AND DESCRIPTION	DISPOSITION
1.	Boise Cascade Canada Ltd. Fort Frances Northwest Region	- Mar. 8/85 - Exceeded BOD discharge limit - OWRA S. 24(5), 24 chgs.	Convicted and Fined $7,200
2.	Boise Cascade Canada Ltd. Kenora Northwest Region	- Sept. 9/85 - Spilled 37 tons of wood fibre to Winnipeg River - OWRA S.16(1), 1 chg. - EPA S.13(1)(a), 1 chg.	Convicted and Fined $8,000 for OWRA chg. FPA chg. WITHDRAWN
3.	Dow Chemical Canada Inc. Sarnia Southwest Region	- Jan. 28/85 - discharged acidic waste to St. Clair River - OWRA S. 16(3), 1 chg. S. 16(1), 2 chgs.	Still before the courts
		AND	
		- Aug. 12/85 OWRA S.16(1), 4 chgs. EPA S.13(1)(c), 2 chgs.	Convicted and Fined $16,000 FPA chgs. WITHDRAWN APPEALED
4.	Polysar Ltd. Sarnia Southeast Region	- Nov. 27/85 - Discharged untreated wastewater to St. Clair River - OWRA S.16(1), 3 chgs.	Still before the courts
		- OWRA S.16(3), 3 chgs.	Still before the courts
5.	Shell Canada Ltd. Southwest Region	- Sept. 8/85 - Discharged oily material into St. Clair River - OWRA S.16(1), 2 chgs. S.16(3), 2 chgs.	Still before the courts
6.	Texaco Canada Inc. Nanticoke West Central Region	- Nov. 14/85 - Discharge of a caustic contaminant to a watercourse - EPA S.13(1)(b), 1 chg. S.13(1)(c), 1 chg. OWRA S.16(1), 2 chgs. S.16(3), 2 chgs.	Still before the courts

TABLE 11 (continued)
Enforcement Actions in 1985

COMPANY	OFFENCE DATE AND DESCRIPTION	DISPOSITION
7. Beaverwood Fibre Company Limited Thorold West Central Region	- Feb. 10/85 - Discharged untreated effluent and contaminants into the Beaverdams Creek leading to Lake Ontario - OWRA S.16(1), 2 chgs. EPA S.13(1)(a), 2 chgs. S.146, 1 chg.	Convicted and Fined $10,000 for one S.16(1) chg. and $5,000 for one S.13(1)(a) chg.
8. Celanese Canada Inc. Kingston Southeast Region	- May 5/85 - Sludge from a sewage treatment spreading operation gained access to Lake Ontario - OWRA S.16(1), 1 chg. S.16(3), 1 chg. EPA S.13(1)(a), 1 chg. S.14(1)(a)	Charges all WITHDRAWN
9. Celanese Canada Inc. Kingston Southeast Region	- Feb. 27/85 - Discharge of thermex to Lake Ontario - OWRA S.16(1), 1 chg. EPA S.13(1)(a), 1 chg. S.13(1)(f), 1 chg.	Charges all WITHDRAWN
10. The Ontario Paper Company Ltd. Thorold West Central Region	- Sept. 28/85 - Spill of processed liquor to Port Dalhousie Harbour - OWRA S.16(3), 1 chg. S.16(1), 1 chg.	Still before the courts
11. Courtaulds Canada Inc. Cornwall Southeast Region	- Jan. 2/85 - Discharge of sulphuric acid to the St. Lawrence River AND - May 26/85 - Discharge of sodium hydroxide to the St. Lawrence River - OWRA S.16(1), 2 chgs.	Still before the courts

8.0 DATA COLLECTION SYSTEM (IMIS)

The Industrial Monitoring Information System (IMIS), an electronic storage and retrieval program, was used to collect data for the 1983, 1984 and 1985 reports. Discharge data from the industrial plants were first submitted to the Ministry of the Environment District Offices, which in turn, transferred the data to the IMIS. Master data files are maintained at the Downsview Computer Centre (DCC) in Toronto and information can be retrieved by the Regional Offices as well as the Head Office. Monthly averages, as reported in Appendix A, were taken from the IMIS data banks.

9.0 ENQUIRIES

Enquiries about a specific source's effluent loadings and status of abatement may be directed to:

- the owner of the source
- Ministry's Regional Office or District Offices.

Ministry addresses are provided at the end of the report (Appendix G).

Copies of this report are available from:

Director,
Communications Branch
Ministry of the Environment
135 St. Clair Ave. West (6th Floor)
Toronto, Ontario
M4V 1P5
(416) 323-4324

Enquiries concerning this report and the industrial abatement program may be directed to the:

Supervisor - Industrial Unit
Water Resources Branch
1 St. Clair Avenue West (4th Floor)
Toronto, Ontario
(416) 323-4886

APPENDICES

APPENDIX A

WASTEWATER DISCHARGE SUMMARY

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Abitibi-Price Inc.
& PLANT LOCATION: Smooth Rock Falls

INDUSTRIAL SECTOR: Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT : Mattagami R.

INDIRECT: Moose R. to James Bay

DESCRIPTION OF ACTIVITY: Kraft pulp mill.

EFFLUENT QUALITY: Contains suspended solids (wood, bark, paper) and many organics (some chlorinated)

EFFLUENT TREATMENT: Clarifier and settling lagoon.

DISCHARGE TYPE: Continuous through twin diffusers.

COMMENTS:

Suspended Solids not in compliance for August. pH not in compliance.
Exceedances resulted from carry over of fibrous material during clean out of settling lagoon.
This operation was conducted in 1986 using different methodology and did not result in exceedances.
Dissolved solids are no longer reported.
Control Order was served August 7, 1985, and set BOD and TSS limits.
The Control Order has daily and 30 consecutive day limits imposed for BOD and TSS for the final effluent.
The final effluent was sampled five times during 1985 and tested by aerated 96-hr. rainbow trout bio-assays. The LC range was 13.4 - 26.5%.

IMIS NO.: 0000860502 SIC CODE: 271 MOE REGION: Northeast DISTRICT: Timmins

d1586

ABITIBI-PRICE INC - 0000860501
SMOOTH ROCK FALLS

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		45000	44700	45200	47115	51600	55300	62000	60300	54700	51127	49000	48000	47795	
BIOCHEM. OXYGEN DEMAND	ACTUAL	9600	8000	8700	9600	6100	6400	8500	9200	6900	6400	7530	7000	7830	
	REQUIREMENT	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	
SUSPENDED SOLDIS	ACTUAL	2300	2100	3800	1500	2400	2200	3200	6200	2100	1300	1750	900	2480	1
	REQUIREMENT	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	
DISSOLVED SOLIDS	ACTUAL	46700	43500	38900	30000	43200	42100	–	–	–	–	–	–	40730	
	REQUIREMENT	–	–	–	–	–	–	–	–	–	–	–	–	–	
pH		2.5	2.9	3.1	2.6	2.9	2.7	3.85	3.68	3.2	3.1	3.5	2.6		12

d0886

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Abitibi-Price Inc.
& PLANT LOCATION: Iroquois Falls

INDUSTRIAL SECTOR: Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT : Abitibi River

INDIRECT: Moose River to James Bay

DESCRIPTION OF ACTIVITY: Logs and wood chips are converted into newsprint by two different processes - stone groundwood and sulphite.

EFFLUENT QUALITY: Contains suspended solids (bark, wood, paper) and a variety of organic compounds

EFFLUENT TREATMENT: Clarifier.

DISCHARGE TYPE: Continuous

COMMENTS:

Control Order specifies a BOD5 limit of 69 tonnes/day averaged over 30 consecutive working days.
Control Order specifies a Suspended Solids limit of 9.1 tonnes/day averaged over 30 consecutive working days and a maximum daily limit of 18.2 tonnes/day. Company is in compliance with Control Order.
The final effluent was sampled five times during 1985 and tested by aerated 96-hr. rainbow trout bio-assays (LC50 range of 14.1-100 %). 4 of 5 LC50's were in the range of 14.1-21.4%.

IMIS NO.: 0000860403 SIC CODE: 031 271 MOE REGION: Northeast DISTRICT: Timmins

d1086

ABITIBI-PRICE INC - 0000860403
IROQUOIS FALLS MILL

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		51082	50197	46257	45492	55522	60220	54016	61029	57940	57545	53353	47279	53327	
BIOCHEM. OXYGEN DEMAND	ACTUAL	47400	41700	51500	46300	48700	61800	52100	49400	43000	41100	47800	40600	47600	
	REQUIREMENT	-	-	-	-	-	-	-	‡ 69000	69000	69000	69000	69000	69000	
SUSPENDED SOLIDS	ACTUAL	5400	5300	5700	4800	6000	7700	4500	5400	4830	5400	4000	4500	5300	
	REQUIREMENT	9100	9100	9100	9100	9100	9100	9100	9100	9100	9100	9100	9100	9100	

‡ Control Order served

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Boise Cascade Canada Ltd.
& PLANT LOCATION: Fort Frances

INDUSTRIAL SECTOR: Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT : Rainy R.

INDIRECT:

DESCRIPTION OF ACTIVITY: Logs and chips are converted into Kraft pulp and groundwood paper specialties

EFFLUENT QUALITY: Contains suspended solids (bark, wood, paper) and trace amounts of organics including chlorinated compounds

EFFLUENT TREATMENT: Primary clarification, secondary treatment by aerated lagoon.

DISCHARGE TYPE: Continuous

COMMENTS:

Suspended solids requirement does not include assumed biological solids.
Company prosecuted for BOD5 exceedances in March, April and May.
Control order expired June 1984
The final effluent was sampled six times during 1985 and tested by aerated 96-hr. rainbow trout bio-assays (LC50 range of 12.7- >100%). 4 of the samples had an LC50 range of 12.7-21.4%; the remaining two had LC50's of 93.1% and >100%.

IMIS NO.: 0000870105 SIC CODE: 271 MOE REGION: Northwest DISTRICT: Kenora

d0886

BOISE CASCADE CANADA LTD - 0000870105
FORT FRANCES

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		73000	74000	71300	68800	76800	78300	70600	59800	68000	74100	72300	66600	71100	
BIOCHEM. OXYGEN DEMAND	ACTUAL	10600	11100	20800	16500	14500	12800	9400	6600	7600	11500	12100	11300	12070	4
	REQUIREMENT	10000	10000	10000	10000	15000	15000	15000	15000	15000	15000	15000	15000	13300	
DISSOLVED SOLIDS	ACTUAL	0	0	0	0	0	0	0	0	0	0	0	0	0	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
SUSPENDED SOLIDS	ACTUAL	6200	6500	6400	5800	5400	6900	5800	4000	5900	7100	6300	6700	6080	
	REQUIREMENT	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Boise Cascade Canada Ltd.
& PLANT LOCATION: Kenora
INDUSTRIAL SECTOR: Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT : Winnipeg R.
INDIRECT:

DESCRIPTION OF ACTIVITY: Logs are made into newsprint through sulphite and stone groundwood pulping

EFFLUENT QUALITY: Contains suspended solids (bark, paper, wood) and a variety of organic compounds

EFFLUENT TREATMENT: Primary clarification.

DISCHARGE TYPE: Continuous

COMMENTS:

Suspended solids exceedances due to new equipment commissioning difficulties.
Control order expires Dec. 31. 1988
The final effluent was sampled two times during 1985 and tested by aerated 96-hr. rainbow trout bio-assays. The LC50's were estimated to have been equal to 13.4% and >100%.

IMIS NO.: 0000870006 SIC CODE: 271 MOE REGION: Northwest DISTRICT: Kenora

d0886

BOISE CASCADE CANADA LTD - 0000870006
KENORA

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		56700	55000	55800	59700	59900	46900	51300	53200	49700	48300	43800	46900	52300	
BIOCHEM. OXYGEN DEMAND	ACTUAL	32600	36200	36600	38000	35800	25900	20000	17900	15600	14900	9610	16300	25000	
	REQUIREMENT	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	
DISSOLVED SOLIDS	ACTUAL	0	0	0	0	0	0	0	0	0	0	0	0		
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
SUSPENDED SOLIDS	ACTUAL	5970	7360	9410	8380	7570	9110	8830	10680	11500	9350	7410	8400	8660	8
	REQUIREMENT	6000	6000	12000	12000	12000	9000	6000	6000	6000	6000	6000	6000	7750	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Dome Mines Ltd.

& PLANT LOCATION: South Porcupine

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT : Swamp

INDIRECT: South Porcupine River

DESCRIPTION OF ACTIVITY: Gold is recovered using Merryl-Crowe process.

EFFLUENT QUALITY: Contains cyanide, copper, lead, nickel and zinc.

EFFLUENT TREATMENT: None

DISCHARGE TYPE: Continuous

COMMENTS:

Copper, nickel, lead and zinc (cumulative requirement 1.0 mg/l) not in compliance 3 out of 12 times.
Exceedance of cyanide in winter months due to poor natural cyanide degradation.
Exceedances of cumulative metal total due to formation of metallo-cyanide complexes.
Discharge from tailings area #6.
Lead will now be sampled on a monthly basis.

IMIS NO.: 0001170000

SIC CODE: 052 0591

MOE REGION: Northeast

DISTRICT: Timmins

d1086

DOME MINES LTD - 0001170000

CONCENTRATIONS IN MG/L
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		-	6937	13988	32985	33340	14169	15760	3900	5496	12092	10197	10783	15330	
pH		7.2	7.2	7.2	7	7.2	8	7.6	7.5	7.4	7.4	7.3	7.2		
CYANIDE	ACTUAL	0.08	0.07	2.22	3.5	0.97	0.14	0.11	0.13	0.12	0.09	0.11	0.39	0.66	2
	REQUIREMENT	2	2	2	2	2	2	2	2	2	2	2	2	2	
COPPER TOTAL	ACTUAL	0.2	0.22	0.47	0.59	0.41	0.1	0.35	0.33	0.26	0.27	0.34	0.54	0.34	
	REQUIREMENT														
IRON TOTAL	ACTUAL	2.39	1.29	1.82	1.58	1.79	0.87	0.88	1.03	0.88	0.34	0.34	0.75	1.16	
	REQUIREMENT														
NICKEL TOTAL	ACTUAL	0.25	0.23	0.28	0.29	0.2	0.19	0.21	0.27	0.2	0.28	0.44	0.44	0.27	
	REQUIREMENT														
LEAD TOTAL	ACTUAL	-	-	0.15	-	-	0.07	-	-	0.12	-	-	0.1	0.11	
	REQUIREMENT														
ZINC TOTAL	ACTUAL	0.12	0.16	0.29	0.22	0.19	0.08	0.15	0.1	0.19	0.13	0.15	0.2	0.16	
	REQUIREMENT														

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Great Lakes Forest Products Ltd. Dryden Division, Dryden

INDUSTRIAL SECTOR: Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT: Wabigoon River

INDIRECT:

DESCRIPTION OF ACTIVITY: Kraft pulp and paper

EFFLUENT QUALITY: Contains suspended solids (bark, wood and paper fines etc.) and chemicals from pulping and bleaching liquors (chlorinated compounds).

EFFLUENT TRETMENT: A primary clarification, secondary treatment by aeration-stabilization system.

DISCHARGE TYPE: Continuous through a submerged diffuser.

COMMENTS:
Suspended solids exceedances due to increased hydraulic flow through secondary system due to heavy rainfalls (May - June).
The final effluent was sampled five times during 1985 and tested by aerated 96-hr. rainbow trout assays (LC50 range of 13.4- >100%). Four samples had LC50's of 13.4%, 19.3%, 45.3% and51.1%. The remaining sample was found to be non-lethal.

IMIS NUMBER: 0000840108 SIC CODE(S): 271 MOE REGION: Northwest DISTRICT: Kenora

d0886

GREAT LAKES FOREST PRODUCTS - 0000840108
DRYDEN DIVISION

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		78000	53000	82000	91000	100000	102000	82000	89000	79000	71000	68000	58000	79400	
BIOCHEM. OXYGEN DEMAND	ACTUAL	2700	1500	2900	3100	3500	3600	2700	3600	2800	2500	2900	2100	2830	
	REQUIREMENT														
DISSOLVED SOLIDS	ACTUAL	0	0	0	0	0	0	0	0	0	0	0	0	0	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
SUSPENDED SOLIDS	ACTUAL	5000	3100	4200	5600	7200	9000	5500	5100	5000	3800	3900	3200	5049	2
	REQUIREMENT	5600	5600	5600	5600	5600	5600	5600	5600	5600	5600	5600	5600	5600	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Kidd Creek Mines Ltd. - Metallurgical Site
& PLANT LOCATION: Timmins

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT : manmade ditch

INDIRECT: Porcupine River

DESCRIPTION OF ACTIVITY: Crushed ore is concentrated, smelted and refined into zinc, copper and gold. Sulphuric acid is made from SO2.

EFFLUENT QUALITY: Contains dissolved metal salts of nickel, copper, zinc etc.

EFFLUENT TREATMENT: Effluent is limed and overflow (decant) is discharged.

DISCHARGE TYPE: Continuous

COMMENTS:

All values in compliance with the Federal Metal Mining Liquid Effluent Regulations.

IMIS NO.: 0000990002

SIC CODE:0594, 0591, 295

MOE REGION: Northeast

DISTRICT: Timmins

d0886

KIDD CREEK MINES LTD - 0000990002
MET. SITE
CONCENTRATION IN MG/L
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT > 6

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
pH		10.6	10.6	11.1	10.2	8.6	7.7	7.4	8.5	9.3	9.8	10.8	11.2		
AMMONIA NITROGEN	ACTUAL	1.5	1.4	1.5	1.3	1.1	0.4	0.5	0.4	0.4	0.4	0.6	0.6	0.81	
	REQUIREMENT														
TOTAL SOLIDS	ACTUAL	1815	1945	1885	1494	1632	2094	2139	2033	2074	2103	1945	1962	1901	
	REQUIREMENT														
SULPHATES	ACTUAL	1070	1174	1106	890	1094	1363	1430	1508	1306	1335	1198	1183	1216	
	REQUIREMENT														
ARSENIC TOTAL	ACTUAL	<.01	<.013	<.011	<.01	<.01	<.01	<.012	<.01	<.01	<.01	<.01	<.01		
	REQUIREMENT	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		
COPPER DISSOLVED	ACTUAL	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1		
	REQUIREMENT	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3		
IRON DISSOLVED	ACTUAL	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1		
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-		
MERCURY TOTAL	ACTUAL	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001		
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-		
LEAD DISSOLVED	ACTUAL	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1		
	REQUIREMENT	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2		
SUSPENDED SOLIDS	ACTUAL	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		
	REQUIREMENT	25	25	25	25	25	25	25	25	25	25	25	25		
ZINC TOTAL	ACTUAL	<.1	<.1	<.2	<.3	<.5	<.2	<.1	<.1	<.1	<.1	<.1	<.1		
	REQUIREMENT	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Kidd Creek Mines Ltd. - Mine Site
& PLANT LOCATION: Timmins

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT : Kidd Creek

INDIRECT: Moose R.

DESCRIPTION OF ACTIVITY: Mine site - ore is crushed for further processing at the met. site.

EFFLUENT QUALITY: Tailings effluent contains dissolved metal salts of nickel, copper, zinc etc..

EFFLUENT TREATMENT:

DISCHARGE TYPE: Continuous

COMMENTS:

Zinc values out of compliance 8 out of 12 months due to heavy rainfall and malfunctioning liming station.

IMIS NO.: 0000990101 SIC CODE:0594, 0591, 295 MOE REGION: Northeast DISTRICT: Timmins

d1086

KIDD CREEK MINES LTD - 0000990101
MINE SITE
CONCENTRATIONS IN MG/L
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT > 6

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
pH		9.5	9.5	9.6	8.7	9.3	10.5	9.4	9.4	9.6	10.5	10.5	10.7	9.77	
ARSENIC TOTAL	ACTUAL	<.01	<.01	<.01	<.01	<.01	<.01	0.013	<.01	<.01	<.01	<.01	<.01		
	REQUIREMENT	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		
COPPER DISSOLVED	ACTUAL	<.01	<.1	<.1	0.1	0.2	<.1	<.1	0.1	<.1	<.1	<.1	<.1		
	REQUIREMENT	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3		
IRON DISSOLVED	ACTUAL	<.1	<.1	<.1	0.2	0.4	0.1	0.1	0.2	<.1	<.1	<.1	<.1		
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-		
MERCURY TOTAL	ACTUAL	<.001	<.001	<.001	0.001	<.001	0.001	0.015	<.001	<.001	<.001	<.001	<.001		
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-		
AMMONIA NITROGEN	ACTUAL	5.7	7.9	9.9	4.7	1.4	1.1	1.1	1.2	1.1	1	1.1	2.8	3.25	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-		
LEAD DISSOLVED	ACTUAL	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1		
	REQUIREMENT	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2		
SUSPENDED SOLIDS	ACTUAL	12	<10	<10	11	12	12	13	12	12	24	16	21		
	REQUIREMENT	25	25	25	25	25	25	25	25	25	25	25	25		
TOTAL SOLIDS	ACTUAL	635	763	918	684	338	424	456	509	570	549	488	617	579	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-		
SULPHATES	ACTUAL	297	367	430	351	142	145	240	287	322	254	217	265	277	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-		
ZINC TOTAL	ACTUAL	0.8	0.3	0.3	4.1	4.2	0.6	1.9	2.5	1.4	0.3	0.6	0.4	1.45	8
	REQUIREMENT	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Pamour Porcupine Mines Ltd, Schumacher Mine
& PLANT LOCATION: Timmins
INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT : Swamp

INDIRECT: North Porcupine River

DESCRIPTION OF ACTIVITY: Gold Mining using the Merryl-Crowe process.

EFFLUENT QUALITY: Cyanide, copper, zinc and nickel in effluent.

EFFLUENT TREATMENT: None

DISCHARGE TYPE: Continuous

COMMENTS:

April data missed due to poor weather conditions.
Copper not in compliance with Ontario Mineral Industry Effluent Guidelines 9 out of 12 months.
No treatment other than natural degradation is effected at this mine.

IMIS NO.: 0001090000
SIC CODE: 0592
MOE REGION: Northeast
DISTRICT: Timmins

d1086

PAMOUR PORCUPINE MINE LTD - 0001090000
SCHUMACHER MINE

CONCENTRATIONS IN MG/L
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 10.6

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
pH		7.06	7.2	7.59	_	7.65	7.67	7.88	7.6	7.83	7.6	7.68	7.5	6.94	
CYANIDE AVAILABLE	ACTUAL	0.325	0.24	0.28	_	0.017	0.017	<.01	<.02	0.02	<.01	0.13	1.75	0.54	
	REQUIREMENT	2	2	2	2	2	2	2	2	2	2	2	2	2	
COPPER TOTAL	ACTUAL	2.93	3.79	4.11	_	2.98	1.94	1.43	1.11	0.88	0.9	1.13	2.9	2.19	10
	REQUIREMENT	1	1	1	1	1	1	1	1	1	1	1	1	1	
IRON TOTAL	ACTUAL	0.48	0.54	0.4	_	0.41	0.71	0.44	0.43	0.55	0.84	0.3	0.63	0.52	
	REQUIREMENT	_	_	_	_	_	_	_	_	_	_	_	_	_	
NICKEL TOTAL	ACTUAL	0.51	0.5	0.59	_	0.33	0.44	0.41	0.43	0.37	0.34	0.42	0.53	0.44	
	REQUIREMENT	1	1	1	1	1	1	1	1	1	1	1	1	1	
LEAD TOTAL	ACTUAL	0.25	0.21	0.22	_	0.18	0.15	0.07	0.14	0.1	0.1	0.13	0.12	0.15	
	REQUIREMENT	1	1	1	1	1	1	1	1	1	1	1	1	1	
ZINC TOTAL	ACTUAL	0.52	0.64	0.56	_	0.34	0.35	0.27	0.2	0.2	0.2	0.17	0.53	0.33	
	REQUIREMENT	1	1	1	1	1	1	1	1	1	1	1	1		

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Pamour Porcupine Mines - Pamour Mine
& PLANT LOCATION: Timmins

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT : nameless creek

INDIRECT: Porcupine River

DESCRIPTION OF ACTIVITY: Gold is recovered by the Merryl-Crowe process.

EFFLUENT QUALITY: Contains cyanide, copper, lead, nickel.

EFFLUENT TREATMENT: none

DISCHARGE TYPE: Continuous

COMMENTS:

All parameters are in compliance with the Ontario Mineral Industry Effluent Guidelines. Treatment effected is natural degradation.

IMIS NO.: 0001090109
SIC CODE: 0591
MOE REGION: North East
DISTRICT: Timmins

d1086

PANOUR PORCUPINE MINE LTD - 0001090109
PANOUR SITE

CONCENTRATIONS IN MG/L
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 10.6

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
pH		7	7.05	7.2	6.9	7.2	7.59	7.5	7.4	6.6	7.12	7.15	7.32	7.17	
CYANIDE AVAILABLE	ACTUAL	<.055	0.03	0.19	<.05	<.03	0.012	0.025	<.01	<.01	<.01	0.013	0.05	0.224	
	REQUIREMENT	2	2	2	2	2	2	2	2	2	2	2	2		
COPPER TOTAL	ACTUAL	0.035	0.05	0.08	0.05	0.1	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.027	
	REQUIREMENT	1	1	1	1	1	1	1	1	1	1	1	1	1	
IRON TOTAL	ACTUAL	1.015	0.945	0.7	1.59	0.81	1.28	0.62	0.6	0.74	0.82	0.55	0.58	0.63	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
NICKEL TOTAL	ACTUAL	0.075	0.1	0.2	0.13	0.09	0.09	0.05	0.09	0.18	0.09	0.1	0.08	0.11	
	REQUIREMENT	1	1	1	1	1	1	1	1	1	1	1	1	1	
LEAD TOTAL	ACTUAL	0.075	0.18	0.2	0.33	0.23	0.15	0.07	0.13	0.08	0.09	0.13	0.09	0.15	
	REQUIREMENT	1	1	1	1	1	1	1	1	1	1	1	1	1	
ZINC TOTAL	ACTUAL	0.09	0.09	0.07	0.1	0.07	0.45	0.07	<.05	0.13	0.07	0.05	0.08	0.11	
	REQUIREMENT	1	1	1	1	1	1	1	1	1	1	1	1	1	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Spruce Falls Power and Paper Co. Ltd.
& PLANT LOCATION: Kapuskasing

INDUSTRIAL SECTOR: Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT : Kapuskasing R.

INDIRECT:

DESCRIPTION OF ACTIVITY: Converts logs and chips into newsprint by 3 different processes
- stone groundwood, TMP and Magnefite

EFFLUENT QUALITY: Contains suspended solids (bark, wood and paper) and many dissolved organics

EFFLUENT TREATMENT: Clarifier.

DISCHARGE TYPE: Continuous

COMMENTS:

In compliance.
Currently under Amending Control Order
New order to be served in January 1987.
There were no monthly exceedances for either BOD or Suspended Solids as the Control Order does not stipulate monthly figures. There did exist exceedances for daily maximum BOD values (3 times) and operating week Suspended Solids average value (3 times). The BOD exceedance occurred during low flow periods in late summer as a result of sudden draughts and high production days. The proposed new Order will examine ways to help the mill predict low flow periods. The Suspended Solids exceedances occurred with clarifier malfunctions, and once, after a shut down period.
The present BOD Control Order requirements are: 40,000 kg/day, 30,000 kg/day between June 1 and Sept. 30 due to low flow rates, 30,000 kg/day averaged over 30 consecutive days any tiem of year.
The present Suspended Solids requirements are 12,900 kg/day averaged over one operating week any time of year.
The final effluent was sampled five times during 1985 and tested by aerated 96-hr. rainbow trout bioassays (LC50 range of 13.4-59.1%). # Of 5 LC50's were in the range of 35.3-45.6%.

IMIS NO.: 0001340009 SIC CODE:031 MOE REGION: Northeast DISTRICT: Timmins

d1086

SPRUCE FALLS POWER AND PAPER CO LTD - 0001340009

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW															
BIOCHEM. OXYGEN DEMAND	ACTUAL	30000	27200	29100	27000	23100	22600	22300	25700	25300	24400	22200	23400	25200	
	REQUIREMENT	40000	40000 e	40000	40000	40000	40000	40000	40000	40000	40000	40000	40000	40000	
SUSPENDED SOLIDS	ACTUAL	9400	9900	9100	9200	7400	6000	7900	5900	7100	6000	5200	5700	7400	
	REQUIREMENT	12900	12900	12900	12900	12900	12900	12900	12900	12900	12900	12900	12900	12900	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Abitibi-Price Inc.
Fort William Division
Thunder Bay

INDUSTRIAL SECTOR: Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT: Lake Superior (Thunder Bay) INDIRECT:

DESCRIPTION OF ACTIVITY: Newsprint is made from logs and chips by using the stone groundwood and Sulphonated Chemical Mechanical processes.

EFFLUENT QUALITY: Contains suspended solids (bark, wood, fibre) and organic compounds from the pulping processes.

EFFLUENT TREATMENT: Clarifier and lagoons.

DISCHARGE TYPE: continuous surface

COMMENTS:

In compliance.
Effluent quality met Ministry requirements. A new Control Order was issued on April 29, 1985. The company is required to meet specific BOD and TSS loadings on the total mill effluent discharged (BOD - 14.5 metric tonnes per day and TSS - 2.5 metric tonnes per day). In addition the company is required to address effluent toxicity.
The combined final effluent was sampled three times during 1985 and tested by aerated 96-hr. rainbow trout bioassays.
The LC50's were estimated to have been equal to 42.8%, 42.8% and 47.9%.

IMIS NUMBER: 0000860205 SIC CODE(S): 271 MOE REGION: Northwest DISTRICT: Thunder Bay

d0886

ABITIBI-PRICE - 0000860205
FORT WILLIAM DIVISION

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		23600	20400	21300	20700	20090	21800	23020	23800	21400	23800	28200	26050	23300	
BIOCHEM. OXYGEN DEMAND	ACTUAL	9600	9600	10800	9670	6230	7500	6370	6900	6640	8030	9750	1090	7680	
	REQUIREMENT	14500	14500	14500	14500	14500	14500	14500	14500	14500	14500	14500	14500	14500	
PHOSPHORUS TOTAL	ACTUAL	9.3	7.83	10.6	16.1	7.63	8.5	8.5	10.13	9.2	11.2	11.8	18.5	10.8	
	REQUIREMENT	23.6	20.4	21.3	20.7	20.1	21.8	23	23.8	21.4	23.7	32	27.7	23.3	
DISSOLVED SOLIDS	ACTUAL	31100	22700	28900	-	-	-	-	-	-	-	-	-		
	REQUIREMENT														
SUSPENDED SOLIDS	ACTUAL	1230	1200	1510	1600	1140	1130	1260	790	1180	830	1030	1600	1210	
	REQUIREMENT	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Abitibi-Price Inc.
Provincial Papers Division
Thunder Bay

INDUSTRIAL SECTOR: Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT: Lake Superior (Thunder Bay) INDIRECT:

DESCRIPTION OF ACTIVITY: Fine papers are made from groundwood pulp and purchased pulp.

EFFLUENT QUALITY: Contains suspended solids (bark, wood, fibre) and many organic compounds from the pulping processes.

EFFLUENT TREATMENT: Clarifier and lagoons.

DISCHARGE TYPE: continuous surface

COMMENTS:

In compliance.
A new Control Order was issued on April 29, 1985. The company is required to meet specific BOD and TSS loadings in the total mill effluent discharged (BOD - 7.3 metric tonnes per day and TSS 2.5 metric tonnes per day). In addition, the company is required to address effluent toxicity.
The final effluent was sampled once during 1985 and tested by aerated 96-hr. rainbow trout bioassay. The sample was found to have been non-lethal. Effluent toxicity complies with Federal Fisheries Act regulations, more than 50% of fish survived in undiluted effluent.

IMIS NUMBER: 0000860106 SIC CODE(S): 271 MOE REGION: Northwest DISTRICT: Thunder Bay

d0886

ABITIBI-PRICE - 0000860106
PROVINCIAL PAPER DIVISION

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		44100	50200	53500	56100	55460	52800	55800	58500	55500	55900	55700	46900	53400	
BIOCHEM. OXYGEN DEMAND	ACTUAL	3620	4270	4170	4710	4490	3750	3510	4270	3940	3520	3730	3380	3950	
	REQUIREMENT	7300	7300	7300	7300	7300	7300	7300	7300	7300	7300	7300	7300	7300	
PHOSPHORUS TOTAL	ACTUAL	2.21	2.81	3.53	3.53	3.22	2.75	3.12	2.4	2.77	2.79	3.9	1.31	2.86	
	REQUIREMENT	44.1	50.2	53.5	56.1	55.5	52.8	55.8	58.5	55.5	55.9	55.7	46.9	53.4	
DISSOLVED SOLIDS	ACTUAL	10100	13600	12200	13400	-	-	-	-	-	-	-	-	-	
	REQUIREMENT														
SUSPENDED SOLIDS	ACTUAL	1590	2100	1660	2330	2010	1850	1390	1840	1660	1880	2210	1350	1820	
	REQUIREMENT	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Abitibi-Price Inc.
Thunder Bay Division
Thunder Bay

INDUSTRIAL SECTOR: Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT: Lake Superior (Thunder Bay) INDIRECT:

DESCRIPTION OF ACTIVITY: Logs are made into newsprint by the stone groundwood and sulphite pulping processes.

EFFLUENT QUALITY: Contains suspended solids (bark, wood, fibre) and many organics from the pulping processes.

EFFLUENT TREATMENT: Clarifier and lagoons.

DISCHARGE TYPE: continuous surface

COMMENTS:

In compliance.
A new Control Order was issued on April 29, 1985. The company is required to meet specific BOD and TSS loadings in the total mill effluent discharged (BOD - 24.5 metric tonnes/day and TSS - 2.0 metric tonnes/day). In addition, the company is required to address effluent toxicity.
The final effluent was sampled six times during 1985 and tested by aerated 96-hr. rainbow trout bioassays (LC50 range of 10-40.1%). Three of the samples had an LC50 range of 31-40.1%; the remaining three had a lower LC50 range of 10-15.1%.

IMIS NUMBER: 0000860007 SIC CODE(S): 271 MOE REGION: Northwest DISTRICT: Thunder Bay

d0886

ABITIBI-PRICE - 0000860007
THUNDER BAY DIVISION

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		30630	30910	31300	30950	30390	30350	36100	32000	38700	41200	42000	43800	34800	
BIOCHEM. OXYGEN DEMAND	ACTUAL	18090	18000	17600	18200	17400	17500	15900	16600	18100	22800	24100	23400	19000	
	REQUIREMENT	24500	24500	24500	24500	24500	24500	24500	24500	24500	24500	24500	24500	24500	
PHOSPHORUS TOTAL	ACTUAL	7.81	9.12	9.07	9.13	8.51	7.89	7.94	7.69	8.9	10.31	9.66	10.08	8.84	
	REQUIREMENT	30.03	30.91	31.3	30.95	30.39	30.35	36.1	32	38.7	41.2	42	43.8	34.8	
DISSOLVED SOLIDS	ACTUAL	52500	56600	57600	53700	53800	-	-	-	-	-	-	-	-	
	REQUIREMENT														
SUSPENDED SOLIDS	ACTUAL	1280	1340	1360	1350	1150	1030	1310	1060	1310	1140	1320	1540	1260	
	REQUIREMENT	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Domtar Packaging Ltd.
Red Rock

INDUSTRIAL SECTOR: Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT: Lake Superior (Nipigon Bay) INDIRECT:

DESCRIPTION OF ACTIVITY: Logs and chips are made into newsprint and corrugating medium by the groundwood and kraft processes.

EFFLUENT QUALITY: Contains suspended solids (bark, wood, fibre) and organic compounds (some chlorinated) from the pulping process

EFFLUENT TREATMENT: Clarifier.

DISCHARGE TYPE: continuous surface

COMMENTS:

In compliance.
A new Control Order was issued on Sept. 29, 1986. The Company is required to meet specific BOD and TSS loadings on the total mill effluent discharged. In addition, the Company is required to meet a toxicity requirement.
The final effluent was sampled nine times during 1985 and tested by aerated 96-hr. rainbow trout bioassays (LC50 range of 37.6- >100%). Six of the samples had an LC50 range of 68-80.6%; two were found to have been non-lethal; and the remaining one had a lower LC50 of 37.6%.

IMIS NUMBER: 0000140202 SIC CODE(S): 271 MOE REGION: Northwest DISTRICT: Thunder Bay

d0886

DOMTAR PACKAGING LTD - 0000140202
RED ROCK

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		95600	92800	91400	82800	93600	96300	93500	102000	98700	99600	91300	81600	93300	
BIOCHEM OXYGEN DEMAND	ACTUAL	15000	18500	20600	18700	15300	18900	15700	15900	17400	19600	21200	16700	17800	
	REQUIREMENT	23000	23000	23000	23000	23000	23000	23000	23000	23000	23000	23000	23000	23000	
PHOSPHORUS TOTAL	ACTUAL	25.8	23.2	21.94	20.6	23.9	20.2	10.29	15.3	28.6	15.9	0	13.9	18.3	
	REQUIREMENT	95.6	92.8	91.4	82.8	93.6	96.3	93.5	102	98.7	99.6	91.3	81.6	93.3	
DISSOLVED SOLIDS	ACTUAL	41300	51100	58200	54700	44500	50700	42300	45500	52700	54200	54100	44200	49500	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
SUSPENDED SOLIDS	ACTUAL	4450	4590	4570	4410	3880	4400	3400	3500	4750	4740	4320	5230	4350	
	REQUIREMENT	5500	5500	5500	5500	5500	5500	5500	5500	5500	5500	5500	5500	5500	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Great Lakes Forest Products Ltd. Thunder Bay

INDUSTRIAL SECTOR: Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT: Kaministiquia River

INDIRECT: 9 km to Lake Superior (Thunder Bay)

DESCRIPTION OF ACTIVITY: Newsprint and kraft pulp are made from logs and chips by the kraft, stone groundwood and sulphite pulping processes.

EFFLUENT QUALITY: Contains suspended solids (bark, wood, fibre etc.) and chemicals from pulping and bleaching liquors (chlorinated compounds).

EFFLUENT TRETMENT: Primary clarification with pH adjustment. Bisulphite liquor cross recovery. Modern closed cycle process in "B" kraft Mill.

DISCHARGE TYPE: Continuous through a submerged diffuser.

COMMENTS:

Total Phosphorus (May) and Suspended Solids (Sept. & Oct.) not in compliance.

Two TSS exceedances due to experimental process modifications and large amounts of Suspended Solids in raw water.

The Control Order for this company is being amended. The final clause requires a report for the company on what further works can be implemented to ensure Provincial Water Quality Requirements are met in the Kaministiquia River. Due to the high river flows, the survey of the river could not be completed in 1985 but has been completed in 1986. A new Control Order to address effluent quality will be issued in 1987.

The combined final effluent was sampled nine times during 1985 and tested by aerated 96-hr. rainbow trout bioassays (LC50 range of 31-50.9%). 7 of 9 LC50's were in the range of 40-46%.

IMIS NUMBER: 0000840009 SIC CODE(S): 271 MOE REGION: Northwest DISTRICT: Thunder Bay

d0886

GREAT LAKES FOREST PRODUCTS LTD - 0000840009
THUNDER BAY

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		220000	220000	220000	170000	250000	240000	250000	250000	230000	200000	180000	170000	217000	
BIOCHEM. OXYGEN	ACTUAL	54000	50000	50000	50000	53000	50000	50000	44000	43000	38000	36000	38000	46300	
DEMAND	REQUIREMENT	77700	77700	77700	77700	77700	77700	77700	77700	77700	77700	77700	77700	77700	
PHOSPHORUS	ACTUAL	202.4	169	178	112	256	221	170	215	129	134	90	114	166	1
TOTAL	REQUIREMENT	220	220	220	170	250	240	250	250	230	200	180	170	217	
SUSPENDED	ACTUAL	14000	14000	12000	13000	14000	14000	10000	14000	15000	15000	14000	11000	13300	2
SOLIDS	REQUIREMENT	14000	14000	14000	14000	14000	14000	14000	14000	14000	14000	14000	14000	14000	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Inco Metals Co.
& PLANT LOCATION: Shebandowan

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT : Shebandowan R. to Kaministiquia R.

INDIRECT: 130 km to Lake Superior

DESCRIPTION OF ACTIVITY: Base metal mining.

EFFLUENT QUALITY: Heavy metals, suspended solids and pH.

EFFLUENT TREATMENT: Polishing lagoon (tailings pond).

DISCHARGE TYPE: Continuous

COMMENTS:

In compliance during discharge.
Ceased operation as of early 1985. May resume operation pending economic climate.
Effluent from the tailings pond was sampled once during 1985 and tested by an aerated 96-hr. rainbow trout. The sample was found to have been non-lethal.

IMIS NO.: 0001690908 SIC CODE: 0592 MOE REGION: Northwest DISTRICT: Thunder Bay

d0886

INCO METALS COMPANY - 0001690908
SHEBANDOWAN

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		3000	3000	3000	3000	3000	3000	_	3000	3000	3000	3000	3000	3000	
pH		7.3	7.4	7.4	7.2	7.9	8.4	_	7.9	7.9	8.1	7.5	7.1		
COPPER TOTAL	ACTUAL	0.126	0.057	0.051	0.042	0.015	0.003	_	0.009	0.003	0.033	0.034	0.162	0.049	
	REQUIREMENT	0.9	0.9	0.9	0.9	0.9	0.9		0.9	0.9	0.9	0.9	0.9	0.9	
IRON TOTAL	ACTUAL	0.51	0.66	0.9	0.87	0.621	0.576	_	0.405	1.88	0.333	0.402	0.93	0.735	
	REQUIREMENT	3	3	3	3	3	3		3	3	3	3	3	3	
NICKEL TOTAL	ACTUAL	0.495	0.489	0.555	0.483	0.564	0.486	_	0.411	0.405	0.501	0.582	1.37	0.576	
	REQUIREMENT	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5	
LEAD TOTAL	ACTUAL	0.006	0.006	0.006	0.006	0.006	0.006	_	0.006	0.006	0.072	0.034	0.084	0.022	
	REQUIREMENT	0.6	0.6	0.6	0.6	0.6	0.6		0.6	0.6	0.6	0.6	0.6	0.6	
SUSPENDED SOLIDS	ACTUAL	3	3	6	6	9	18	_	3	3	3	6	6	6	
	REQUIREMENT	45	45	45	45	45	45	45	45	45	45	45	45	45	
ZINC TOTAL	ACTUAL	0.027	0.006	0.147	0.036	0.003	0.006	_	0.186	0.006	0.056	0.074	0.143	0.063	
	REQUIREMENT	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: James River Marathon Ltd.
(formerly American Can)
Marathon

INDUSTRIAL SECTOR: Kraft Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT: Lake Superior INDIRECT:

DESCRIPTION OF ACTIVITY: Pulp is produced from chips by the kraft pulping process

EFFLUENT QUALITY: Contains suspended solids (bark, wood, fibres) and many organic (some chlorinated) compounds.

EFFLUENT TREATMENT:

DISCHARGE TYPE: continuous subsurface

COMMENTS:

In compliance.
Existing Control Order requires further stepwise reductions in Total Suspended Solids and Biochemical Oxygen Demand as follows: BOD to 35 kg/ADMT by Dec. 31, 1986 and 30 kg/ADMT by Dec.31, 1989 and S.S. to 9,000 kg/day by Dec. 31, 1984 (met in 1983), 6,000 kg/day by Dec. 31, 1985 and 4,000 kg/day byJune 30, 1988. The Order also requires compliance with the federal toxicity requirement.
The final effluent was effluent was sampled nine times during 1985 and tested by aerated 96-hr. rainbow trout bioassays (LC50 range of 5.4-22.6%). 7 of 9 LC50's were >15%.

IMIS NUMBER: 0000850008 SIC CODE(S): 271 MOE REGION: Northwest DISTRICT: Thunder Bay

d0886

JAMES RIVER MARATHON LTD - 0000850008
MARATHON

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		70500	60410	69200	67020	66000	66700	72400	73500	71300	72300	69200	69900	69040	
BIOCHEM. OXYGEN DEMAND	ACTUAL	13400	11400	15200	14500	12500	12500	12800	14000	11100	15200	12800	13300	13200	
	REQUIREMENT														
PHOSPHORUS TOTAL	ACTUAL	31.7	21.8	25.1	30.5	25.1	25.2	27.2	32	31	35.8	36	37.7	30.9	
	REQUIREMENT	70.5	60.41	69.2	67.02	66	66.7	72.4	73.5	71.3	72.3	69.2	69.9	69.04	
DISSOLVED SOLIDS	ACTUAL	96800	68100	98400	97700	84500	80300	91900	97000	71900	95900	94600	84100	88400	
	REQUIREMENT														
SUSPENDED SOLIDS	ACTUAL	4790	3140	3810	2880	4420	3940	4060	6620	4420	3760	4910	7540	4520	
	REQUIREMENT	9000	9000	9000	9000	9000	9000	9000	9000	9000	9000	9000	9000	9000	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Kimberly-Clark of Canada Ltd. Terrace Bay

INDUSTRIAL SECTOR: Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT: Blackbird Creek

INDIRECT: Lake Superior (Jackfish Bay)

DESCRIPTION OF ACTIVITY: Logs are made into pulp by the kraft pulping process

EFFLUENT QUALITY: Contains suspended solids (bark, wood, fibres) and organic compounds (some chlorinated) from the pulping process.

EFFLUENT TREATMENT:

DISCHARGE TYPE: continuous surface

COMMENTS:

In compliance.
Effluent quality met Ministry requirements. The existing Control Order which expires December 31, 1987, includes measures to further improve effluent quality (BOD to be reduced to 40 kg/ADMT by Sept. 30, 1985 and to 30 kg/ADMT by Oct. 31, 1986), to produce an effluent non-lethal to fish (1986).
Control Order amended in 1986. New Control Order to be issued in 1987.
The final effluent was sampled ten times during 1985 and tested by aerated 96-hr. rainbow trout (LC50 range of 10-45.6%).

IMIS NUMBER: 0000830000

SIC CODE(S): 271

MOE REGION: Northwest

DISTRICT: Thunder Bay

d0886

KIMBERLY CLARK OF CANADA - 0000830000
TERRACE BAY

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		142000	123000	118000	109000	111000	119000	114000	130000	117000	121000	109000	110000	119000	
BIOCHEM. OXYGEN DEMAND	ACTUAL	41200	41500	42200	42000	36000	31000	30000	30000	29700	30500	33600	31800	35000	
	REQUIREMENT														
PHOSPHORUS TOTAL	ACTUAL	73.8	89.5	57.6	78.3	65	37.4	25	54.5	45.3	64.8	61	61	59.4	
	REQUIREMENT	142	123	118	109	111	119	114	130	117	121	109	110	119	
DISSOLVED SOLIDS	ACTUAL	185000	191000	176000	184000	169000	157000	139000	154000	136000	152000	160000	157000	163000	
	REQUIREMENT														
SUSPENDED SOLIDS	ACTUAL	6500	7600	5600	7600	5100	5700	5100	6500	5790	5100	4300	4900	5820	
	REQUIREMENT	8500	8500	8500	8500	8500	8500	8500	8500	8500	8500	8500	8500	8500	

WASTEWATER DISCHARGE SURVEY
1985

COMPANY NAME: Noranda Hemlo Inc.
& PLANT LOCATION: Marathon
INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT : Lim Lake

INDIRECT: Lake Superior

DESCRIPTION OF ACTIVITY: Gold mining and milling.

EFFLUENT QUALITY: Heavy metals, suspended solids, pH, cyanide.

EFFLUENT TREATMENT: Approved treatment is SO2 - air system for cyanide oxidation of effluent.
Disposal area decant to Lim Lake. Mill site sedimentation pond effluent to Cedar Creek.

DISCHARGE TYPE: continuous

COMMENTS:

pH not in compliance.
A number of cyanide destruction methods are currently being examined.
The final effluent was sampled 12 times during 1985 and tested by aerated 96-hr. rainbow trout bioassays (LC50 range of 13.4 - >100%). Eight of the LC50's were in the range of 13.4 - 24%.

IMIS NO.: 0042110205 SIC CODE: 0592 MOE REGION: Northwest DISTRICT: Thunder Bay

d0886

NORANDA HEMLO
MARATHON

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		-	-	-	-	-	-	-	132	138	151	33.8	93.9		
SUSPENDED SOLIDS	ACTUAL	-	-	-	-	-	-	-	110	115	126	28.2	78.2		
	REQUIREMENT								132	138	151	33.8	93.9		
pH		-	-	-	-	-	-	-	10.4	10.4	10.5	10.3	8.97		4
COPPER	ACTUAL	-	-	-	-	-	-	-	1.31	1.38	1.51	0.338	0.939		
	REQUIREMENT								39.6	41.4	45.3	10.1	28.2		
ZINC	ACTUAL	-	-	-	-	-	-	-	2.1	2.3	2.5	0.56	1.56		
	REQUIREMENT								66	69	75.5	16.9	47		

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Noranda Mines Ltd. GECD Div.
& PLANT LOCATION: Manitouwadge

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT : Black R. to Pic R.

INDIRECT: 154 km to Lake Superior

DESCRIPTION OF ACTIVITY: Base metal mining.

EFFLUENT QUALITY: Contains suspended solids, heavy metals, and ammonia.

EFFLUENT TREATMENT: pH adjustment and clarification of metal precipitates from tailing area and seepage.

DISCHARGE TYPE: Continuous

COMMENTS:

Suspended Solids not in compliance.
Treated effluent (as reported) discharged to a swamp for further polishing.
The final effluent was sampled 2 times during 1985 and tested by aerated 96-hr. rainbow trout bioassays.
Both of the LC50's were estimated to have been equal to 11.8%.

IMIS NO.: 0001800002 SIC CODE: 0592 MOE REGION: Northwest DISTRICT: Thunder Bay

d0886

NORANDA MINES LTD - 0001800002
GECO DIVISION

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		3080	3420	3820	4706	4909	4440	3620	2430	3330	3560	3690	3780	3730	
pH		8.9	8.9	8.9	9.1	9.2	9.2	9.1	9.1	9.1	9	9	9		
COPPER TOTAL	ACTUAL	0.8	1.33	3.78	2.35	2.36	1.11	1.01	1.09	1.17	1.71	1.51	1.47	1.63	
	REQUIREMENT	3.08	3.42	3.82	4.71	4.91	4.44	3.62	2.43	3.33	3.56	3.69	3.78	3.73	
SUSPENDED SOLIDS	ACTUAL	66.3	47.6	70.3	93.5	90.1	19.3	84.4	51.8	86.5	83.3	76	55.2	70.1	9
	REQUIREMENT	46.2	51.3	57.3	70.6	73.4	66.6	54.3	36.5	50	53.4	55.4	56.7	56	
ZINC TOTAL	ACTUAL	0.46	0.24	0.53	9.61	0.98	1.07	0.76	0.61	0.77	0.82	0.88	0	0.65	
	REQUIREMENT	3.08	3.42	3.82	4.71	4.91	4.44	3.62	2.43	3.33	3.56	3.69	3.78	3.73	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Ogilvie Mills Ltd.
(Industrial Grain Products)
Thunder Bay

INDUSTRIAL SECTOR: Food and beverage

RECEIVING WATERBODY: DIRECT: Kaministiquia River INDIRECT: 3 km to Lake Superior (Thunder Bay)

DESCRIPTION OF ACTIVITY: Starch and gluten are separated from the grain.

EFFLUENT QUALITY: Contains suspended solids (wheat husk) and starches (glutens).

EFFLUENT TREATMENT: Secondary biological anaerobic / aerobic.

DISCHARGE TYPE: continuous surface

COMMENTS:

BOD not in compliance.
Control Order limits BOD5 to 900 kg/day.
Treatment plant is state of the art for BOD effluent reduction.
The company, with the concurrence of the Ministry, is continuing efforts to improve treatment plant operations.
The final effluent was sampled twice during 1985 and tested by aerated 96-hr. rainbow trout bioassay.
Both LC50's were estimated to have been equal to 13%.

IMIS NUMBER: 0000880005 SIC CODE(S): MOE REGION: Northwest DISTRICT: Thunder Bay

d0886

OGILVIE MILLS - 0000880005

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		975	970	990	990	1030	1009	1100	1010	950	970	957	930	1014	
BIOCHEM. OXYGEN DEMAND	ACTUAL	2850	3410	3600	7300	1450	1018	1600	3440	1600	900	2270	849	2530	10
	REQUIREMENT	900	900	900	900	900	900	900	900	900	900	900	900	900	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME
& PLANT LOCATION: Ontario Hydro
Thunder Bay, TGS
Thunder Bay

INDUSTRIAL SECTOR: Electric Power Production

RECEIVING WATERBODY: DIRECT: Lake Superior (Thunder Bay) INDIRECT:

DESCRIPTION OF ACTIVITY: Coal is burned

EFFLUENT QUALITY: Hot water, suspended solids, BOD5.

EFFLUENT TREATMENT: Coagulant aid, sedimentation.

DISCHARGE TYPE: Continuous (once through condenser cooling water).

COMMENTS:

In compliance.
Effluent quality met Ministry requirements.

IMIS NUMBER: SIC CODE(S): 572 MOE REGION: Northwest DISTRICT: Thunder Bay

d0886

ONTARIO HYDRO
THUNDER BAY

ALL LOADS IN KG/DAY
ALL FLOWS IN MILLION CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	% OF OPERATING HOURS EXCEEDED
FLOW		34.7	29	27.1	21.6	7.6	18.1	26.6	23	8.6	17	26.6	20	21.7	
TEMPERATUTRE RISE	ACTUAL	8	8	8	9	8.8	8.5	9	9	9	9	9	7	8.52	
(MAX.)	GUIDELINE	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	
MAX. EFFLUENT	ACTUAL	8	8	8	14.3	19.8	21	24	25	23	16	12	7	15.51	
TEMPERATURE	GUIDELINE	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Reichhold Chemicals Ltd. Thunder Bay

INDUSTRIAL SECTOR: Organic chemicals, Synthetic fibres

RECEIVING WATERBODY: DIRECT: Kaministiquia River

INDIRECT: 7 km to Lake Superior (Thunder Bay)

DESCRIPTION OF ACTIVITY: Phenolic chemicals

EFFLUENT QUALITY: Contains low levels of phenolic compounds

EFFLUENT TREATMENT: Secondary activated sludge.

DISCHARGE TYPE: continuous surface

COMMENTS:

Phenols and Suspended Solids not in compliance.
Company plans to discharge to municipal sewer system once sewer lines are extended.
* Phenolic requirement 1 mg/l in Certificate of Approval; Suspended Solids guideline 15 mg/l.
The final effluent was sampled 5 times during 1985 and tested by aerated 96-hr. rainbow trout bioassay.
Three of the LC50's were 45.6%; the remaining two were 22.6 and 27.3%.
An additioanl clarifier was added in 1985 and effluent recirculation is used to reduce Suspended Solids in the discharge.
The Ministry is working with the Company to further reduce the Suspended Solids.

IMIS NUMBER: 0001830009

SIC CODE(S): 3783

MOE REGION: Northwest

DISTRICT: Thunder Bay

d0886

REICHHOLD LTD - 0001830009

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		283	296	359	387	387	382	307	249	267	256	288	338	317	
pH		8.1	7.9	7.8	7.8	7.9	7.9	8	7.8	8.1	8.2	8.1	8.2		
PHENOLS mg/L	ACTUAL	0.0051	0.0087	0.0141	0.0155	0.0077	0.0076	0.0031	0.0025	0.0027	0.0042	0.005	0.0063	0.0069	3
	REQUIREMENT	0.007	0.006	0.007	0.008	0.008	0.008	0.006	0.005	0.005	0.005	0.006	0.007	0.006	
PHOSPHATES TOTAL	ACTUAL	0	0.021	0	0	0	0	0.034	0.311	0.027	0.649	0.006	0.157	0.1	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
SUSPENDED SOLIDS	ACTUAL	130	150	190	160	110	120	100	90	70	50	47	64	107	12
	REQUIREMENT	4.25	4.44	5.39	5.81	5.81	5.73	4.61	3.74	4.01	3.84	4.32	5.07	4.76	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: The Algoma Steel Corp. Ltd. (Ore Div.)
& PLANT LOCATION: Wawa

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT : Magpie R.

INDIRECT: 10 km to Lake Superior

DESCRIPTION OF ACTIVITY: Sulphur bearing iron ore is roasted to make iron pellets

EFFLUENT QUALITY: Contains suspended solids (metallic chlorides) and dissolved metal sulphates

EFFLUENT TREATMENT: Tailings pond system (3 ponds) in series.

DISCHARGE TYPE: Continuous

COMMENTS:

No formal requirements but effluent discharge quality consistently meets provincial mine effluent quality objectives.

IMIS NO.: 0000040105
d0886

SIC CODE: 058

MOE REGION: Northeast

DISTRICT: Sault Ste. Marie

THE ALGOMA STEEL CORP LTD - 0000040105
WAWA

ALL VALUES ARE IN CONCENTRATION UNITS
(MG/L)

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
pH		7.6	7.5	7.6	7.8	7.7	7.4	7.6	7.4	7.3	7.5	7.5	7.5		
ALKALINITY AS CaCO3	ACTUAL REQUIREMENT	48.5	29.5	34.5	27.5	56	60	130	73	88.5	45.5	38.5	46	56.3	
COPPER TOTAL	ACTUAL REQUIREMENT	0	0	0	0	0.01	0	0	0	0.01	0	0	0	0	
IRON TOTAL	ACTUAL REQUIREMENT	0.07	0.05	0.05	0.05	0.05	0.05	0.07	0.1	0.05	0.05	0.05	0.05	0.06	
MANGANESE TOTAL	ACTUAL REQUIREMENT	0.06	0.02	0.01	0.15	0.1	1.04	0.07	1.21	0.12	0.22	1.03	0.13	0.34	
NICKEL TOTAL	ACTUAL REQUIREMENT	0	0	0	0	0	0.02	0	0	0	0.02	0	0	0	
LEAD TOTAL	ACTUAL REQUIREMENT	0	0	0	0	0	0	0.03	0.2	0	0	0	0	0	
DISSOLVED TOTALS	ACTUAL REQUIREMENT	2.5	1	1	1.5	1	1	9	1	1	1	1	1	1.8	
SUSPENDED SOLIDS	ACTUAL REQUIREMENT	489	414	509	708	935	934	1323	1316	1060	846	815	753	842	
SULPHATES	ACTUAL REQUIREMENT	270	260	265	417	545	550	737	745	620	440	440	440	476	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Champlain Industries Ltd.
& PLANT LOCATION: Tara

INDUSTRIAL ACTIVITY: Food and Beverage

RECEIVING WATERBODY: DIRECT : Sauble R.

INDIRECT:

DESCRIPTION OF ACTIVITY: Whey is made into whey based products.

EFFLUENT QUALITY: Contains organic compounds such as proteins.

EFFLUENT TREATMENT: Secondary. Oxidation ditch clarifier sludge irrigated onto company land

DISCHARGE TYPE: Continuous

COMMENTS:

In compliance.

IMIS NO.: 0001000108

SIC CODE: 104

MOE REGION: Southwest

DISTRICT: Owen Sound

d0886

CHAMPLAIN INDUSTRIES LTD - 0001000108

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		55	55	–	51	58	72.7	72.6	60.01	67.1	70	60	55	56.4	
BIOCHEM. OXYGEN DEMAND	ACTUAL	0.58	0.43	–	–	0.55	0.91	–	0.64	0.43	0.43	0.15	0.27	0.488	
	REQUIREMENT	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	
AMMONIA NITROGEN	ACTUAL	–	–	–	0.15	0.046	0.09	0.063	0.07	0.07	7.9	0.54	0.05	0.998	
	REQUIREMENT	–	–	–	–	–	–	–	–	–	–	–	–	–	
pH		8.28	8.31	8.22	8.46	8.13	8	7.92	7.83	7.9	7.7	7.95	7.85		
PHOSPHATES TOTAL	ACTUAL	–	–	–	0.45	0.4	0.49	0.46	0.39	0.38	0.38	0.47	0.26	0.409	
	REQUIREMENT	–	–	–	–	–	–	–	–	–	–	–	–	–	
SUSPENDED SOLIDS	ACTUAL	–	–	–	–	–	–	–	–	0.44	0.44	0.42	0.11	0.353	
	REQUIREMENT	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME
& PLANT LOCATION: Denison Mines Ltd.
Elliot Lake

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT: Stollery Lake to Serpent River INDIRECT: 70 km to Lake Huron (North Channel)

DESCRIPTION OF ACTIVITY: Ore is mined and milled and separated into tailings and concentrates. Ammonia - based compounds are used in the recovery of uranium.

EFFLUENT QUALITY: Contains dissolved metal salts, ammonia compounds and radioactive material.

EFFLUENT TREATMENT: Lagoon - Two stage treatment consisting of barium chloride for Ra 226 precipitation and lime addition for pH adjustment, then to a polishing pond.

DISCHARGE TYPE: Continuous

COMMENTS:

The radioactivity limit is that set by Canada's Atomic Energy Control Board. Discharge is in compliance with AECB license requirements.

IMIS NUMBER: 0001680008 SIC CODE(S): 057 MOE REGION: Northeast DISTRICT: Sault Ste.Marie

d0886

DENISON MINES LTD - 0001660008

CONCENTRATIONS IN MG/L
ALL FLOWS IN CUBIC METRES/DAY
RADIUM 226 UNITS IN BEQUERELS/LITRE
pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		15200	20220	27700	37760	26500	19800	17600	19008	22030	17600	22030	10540	21300	
pH		9.5	9.3	8.9	7.9	7.2	7.2	7.9	8.4	7.9	8	8	8.5	7.23	
RADIUM 226 FILTERED	ACTUAL REQUIREMENT	0.068 1.11	0.1 1.11	0.085 1.11	0.115 1.11	0.081 1.11	0.074 1.11	0.085 1.11	0.059 1.11	0.07 1.11	0.078 1.11	0.089 1.11	0.063 1.11	0.081 1.11	
RADIUM 226 TOTAL	ACTUAL REQUIREMENT	1.01	1.22	1.25	1.74	1.27	1.11	1.78	1.19	1.19	1.40	0.94	0.6	1.29	
COPPER TOTAL	ACTUAL REQUIREMENT	-	-	-	0.38 22.6	-	-	0.18 10.6	-	-	0.18 10.6	-	-	-	
NICKEL TOTAL	ACTUAL REQUIREMENT	-	-	-	0.75 37.7	-	-	0.35 17.6	-	-	0.7 17.6	-	-	-	
SUSPENDED SOLIDS	ACTUAL REQUIREMENT	-	-	-	264 566	-	-	52.8 264	-	-	52.8 264	-	-	-	
ZINC TOTAL	ACTUAL REQUIREMENT	-	-	-	1.13 37.7	-	-	0.18 17.6	-	-	0.18 17.6	-	-	-	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Denison Mines Ltd. (Williams Lake)
(Beaver Pond Outlet)
Elliot Lake

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT: Williams Lake to Beaver Pond to Serpent River

INDIRECT: 70 km to Lake Huron (North Channel)

DESCRIPTION OF ACTIVITY: Idle tailings area.

EFFLUENT QUALITY: Contains dissolved metal salts and radioactive material.

EFFLUENT TREATMENT: Tailings area runoff is treated with caustic and barium chloride, precipitate settled in Beaver Pond area and effluent discharges to Serpent River.

DISCHARGE TYPE: Continuous

COMMENTS:

Discharge in compliance with AECB license requirements based on annual average, one monthly exceedance in August for Suspended Solids.
The radioactivity limit is that set by Canada's Atomic Energy Control Board.
Treated runoff from an idle tailings area.

IMIS NUMBER: 0001680107 SIC CODE(S): 057 MOE REGION: Northeast DISTRICT: Sault Ste.Marie

d0886

DENISON MINES LTD - 0001600107

CONCENTRATIONS IN MG/L
ALL FLOWS IN CUBIC METRES/DAY
RADIUM 226 UNITS IN BEQUERELS/LITRE
pH LIMIT 6.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		518	259	1120	6390	1210	259	259	864	518	1120	1560	259	1190	
pH		9.4	9.1	9.3	9.3	7.6	7.4	7.3	7.9	7.6	7.8	9.3	9	8.4	
RADIUM 226 FILTERED	ACTUAL	0.067	0.114	0.122	0.144	0.111	0.160	0.159	0.162	0.140	0.085	0.078	0.063	0.117	
	REQUIREMENT	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	
RADIUM 226 TOTAL	ACTUAL	-	-	0.196	-	-	-	-	0.24	0.207	0.103	0.107	0.156	0.168	
	REQUIREMENT														
SUSPENDED SOLIDS	ACTUAL	2		3	3		1	3	38		1	5	2	6.44	1
	REQUIREMENT	15		15	15		15	15	15		15	15	15	15	
ZINC TOTAL	ACTUAL				0.01									0.01	
	REQUIREMENT				1									1	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Denison Mines Ltd. (Stanrock)
Elliot Lake

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT: Serpent River

INDIRECT: 60 km to Lake Huron (North Channel)

DESCRIPTION OF ACTIVITY: Mine is currently closed.

EFFLUENT QUALITY: Contains dissolved metal salts and radioactive material.

EFFLUENT TREATMENT: Tailings area runoffand mine runoff is treated with lime slurry and barium chloride and settled in treatment ponds for later release into river.

DISCHARGE TYPE: Continuous

COMMENTS:

Discharge in compliance with AECB License requirements.
The radioactivity limit is that set by Canada's Atomic Energy Control Board.
Mine is currently closed - not operating.

IMIS NUMBER: 0001680206 **SIC CODE(S):** 057 **MOE REGION:** Northeast **DISTRICT:** Sault Ste.Marie

d1286

DENISON MINES LTD - 0791680206

CONCENTRATIONS IN MG/L
ALL FLOWS IN CUBIC METRES/DAY
RADIUM 226 UNITS ARE IN BEQUERELS/LITRE

pH LIMIT 6.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		2330	2506	4920	15700	5270	3370	1810	2160	2420	5460	8810	2506	4700	
pH		7	7.5	9.7	7.8	9.3	7.6	7.3	7.8	7.4	8	11.2	10.7	8.44	3
RADIUM 226 TOTAL	ACTUAL	0.067	1	0.063	0.07	0.141	0.229	0.237	0.229	0.181	0.125	0.111	0.078	0.211	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
COPPER TOTAL	ACTUAL				0.01			0.01						0.01	
	REQUIREMENT				0.6			0.6						0.6	
NICKEL TOTAL	ACTUAL							0.02			0.04			0.03	
	REQUIREMENT							1			1			1	
SUSPENDED SOLIDS	ACTUAL	6		6	1						2	4	11	5	
	REQUIREMENT	15		15	15						15	15	15	15	
ZINC TOTAL	ACTUAL				0.2						0.2			0.2	
	REQUIREMENT				1						1			1	
LEAD-TOTAL	ACTUAL							0.06			0.04			0.05	
	REQUIREMENT							0.4			0.4			0.4	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Domtar Chemical Grp. CDC Division
& PLANT LOCATION: Orillia

INDUSTRIAL SECTOR: Organic Chemicals, Synthetic Fibres

RECEIVING WATERBODY: DIRECT : Lake St. John

INDIRECT: Georgian Bay

DESCRIPTION OF ACTIVITY: Produces detergents and detergent bases

EFFLUENT QUALITY:

EFFLUENT TREATMENT:

DISCHARGE TYPE: Continuous

COMMENTS:

In compliance.

IMIS NO.: 0000140004 SIC CODE: 376 MOE REGION: Central DISTRICT: Barrie

d0886

DOMTAR CHEMICAL GRP CDC DIVISION - 0000148000

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		128	142	142	130	135	149	132	146	174	124	140	130	139	
pH		7.7	7.4	7.4	7.5	7.6	7.6	7.7	7.3	8	7.7	7.8	7.6		
AMMONIA NITROGEN	ACTUAL	0.089	0.142	0.142	0.065	0.108	0.104	0.079	0.073	0.087	0.06	0.066	0.052	0.087	
	REQUIREMENT	1.28	1.42	1.42	1.3	1.35	1.49	1.32	1.46	1.74	1.24	1.4	1.3	1.39	
NITRATES AND NITRITES	ACTUAL	0.256	0.071	0	0	0.001	0.003	0.04	0.26	0.14	0	0	0.13	0.081	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
PHENOLS	ACTUAL	0	0	0	0	0	0	0	0	0	0	0	0	0	
	REQUIREMENT	0.00256	0.00284	0.00284	0.0026	0.0027	0.00298	0.00264	0.00292	0.00348	0.00248	0.0028	0.0026	0.00278	
PHOSPHORUS TOTAL	ACTUAL	0.014	0.016	0.006	0.007	0.004	0.004	0.005	0.004	0.005	0.003	0.004	0.003	0.005	
	REQUIREMENT	0.128	0.142	0.142	0.13	0.135	0.149	0.132	0.146	0.174	0.124	0.14	0.13	0.139	
DISSOLVED SOLIDS	ACTUAL	1.41	0.99	0.99	1.56	1.35	0.89	0.53	1.02	1.57	1.12	1.26	1.43	1.18	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
TOTAL ORGANIC CARBON	ACTUAL	1.22	1.16	1.14	1.6	1.04	1.18	0.99	1.12	1.32	1.11	1.12	1.39	1.2	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME Domtar Chemicals Ltd.
& PLANT LOCATION: Sifto Salt Division
Goderich

INDUSTRIAL ACTIVITY: Industrial Minerals

RECEIVING WATERBODY: DIRECT: Maitland River

INDIRECT: Lake Huron

DESCRIPTION OF ACTIVITY: Salt is mined and purified for use.

EFFLUENT QUALITY: Contains dissolved chlorides and sulphates of sodium, calcium etc.

EFFLUENT TREATMENT: Settling basins.

DISCHARGE TYPE: continuous

COMMENTS:

In 1985, company was employing best available technology.

Technical review of company discharge effluent was completed in 1985 and recommendations to change monitoring location to the company's property boundary in order to better assess the effluent were accepted. Change was implemented in January of 1986.

The Ministry is currently assessing this data with comparisons made to historical data.

IMIS NUMBER: 0000140707 SIC CODE: 079 MOE REGION: Southwest DISTRICT: Owen Sound

d0886

DOMTAR CHEMICALS GROUP - 0000140707
SIFTO SALT DIVISION

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		-	-	-	10400	10500	10400	9390	10100	9590	9620	9770	10200	10000	
pH		-	-	-	8.35	8.4	8.3	8.3	8.3	8.2	8.4	_	8.1		
CHLORIDES	ACTUAL REQUIREMENT	-	-	-	58200	35100	_	30400	29500	_	_	_	30700	35600	
DISSOLVED SOLIDS	ACTUAL REQUIREMENT	-	-	-	91000	64600	42700	58800	58200	88200	146000	_	99200	81200	
SUSPENDED SOLIDS	ACTUAL REQUIREMENT	-	-	-	1810	1660	887	1250	1120	2360	3300	_	2560	1880	
TOTAL SOLIDS	ACTUAL REQUIREMENT	-	-	-	92800	66300	43600	39200	_	_	_	_	101700	71600	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: DuPont Canada Inc. Nipissing Works
& PLANT LOCATION: North Bay
INDUSTRIAL SECTOR: Inorganic Chemicals

RECEIVING WATERBODY: DIRECT : Wasa River - Lake Nipissing

INDIRECT: 121 km from French R. Main Channel

DESCRIPTION OF ACTIVITY: Production of explosives.

EFFLUENT QUALITY: Contains nitrates and ammonia.

EFFLUENT TREATMENT: Equalization pond for pH control.

DISCHARGE TYPE: Continuous

COMMENTS:

In compliance.

IMIS NO.: 0000080200 SIC CODE: 379 MOE REGION: Northeast DISTRICT: North Bay

d1186

DUPONT CANADA INC - 0000080200
NIPISSING WORKS

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		4370	4450	5180	6340	4470	3470	3840	3640	3870	4305	3970	_	4360	
FIELD pH		7.2	7	7.1	6.9	6.7	6.8	7.1	7	7.2	7.1	7.2	_		
AMMONIA NITROGEN	ACTUAL	12.6	16.1	18.8	27.8	23.8	19.4	10.03	8.2	8.7	9.7	25.7	_	24.2	
	REQUIREMENT	43.7	44.5	51.8	63.4	44.7	34.7	38.4	36.4	38.7	43.05	39.7		43.6	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: E. B. Eddy Forest Products Ltd. Espanola

INDUSTRIAL SECTOR: Pulp and Paper Mill

DESCRIPTION OF ACTIVITY: Logs and chips are converted by the kraft pulping process into paper and pulp

RECEIVING WATERBODY: DIRECT: Spanish River INDIRECT: 47 km. to Lake Huron (North Channel)

EFFLUENT QUALITY: Contains suspended solids (bark, wood and paper) and dissolved organic compounds.

EFFLUENT TREATMENT:

DISCHARGE TYPE: continuous at shore

COMMENTS:

The final effluent was sampled 3 times during 1985 and tested by aerated 96-hr. rainbow trout bioassay. The samples were found to have been non-lethal. Effluent toxicity complies with Federal Fisheries Act regulations, more than 50% of fish survived in undiluted effluent.

IMIS NUMBER: 0000980003 SIC CODE(S): 271 MOE REGION: Northeast DISTRICT: Sudbury

d0886

E B EDDY FOREST PRODUCTS LTD - 0000980003
ESPANOLA

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		93300	92700	99100	85700	104000	122000	104000	111080	109000	104000	101500	78300	100325	
BIOCHEM. OXYGEN DEMAND	ACTUAL	3990	3820	3590	3010	2690	2220	2150	2170	1840	3110	2390	1320	2690	
	REQUIREMENT														
pH		7.2	7.1	7.1	7.2	7	7.1	7	6.9	7.1	7	7.2	7.4		
SUSPENDED SOLIDS	ACTUAL	5440	6290	6780	6280	5190	4250	3600	4550	4050	5800	6350	4830	5284	
	REQUIREMENT														

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Eldorado Resources Ltd.
& PLANT LOCATION: Blind River

INDUSTRIAL SECTOR: Metal Mining, Smelting and Refining

RECEIVING WATERBODY: DIRECT : Mississagi R. mouth

INDIRECT: North Channel (Lake Huron)

DESCRIPTION OF ACTIVITY: Uranium refining using concentrated nitric acid solvent , extraction and evaporation/decomposition of the nitrate to the oxide by the addition of heat.

EFFLUENT QUALITY: Effluent contains Radium 226, nitrates uranium and phosphorous.

EFFLUENT TREATMENT: Holding ponds.

DISCHARGE TYPE: Batch

COMMENTS:

In compliance with AECB licence requirements.

IMIS NO.: 0000830308 SIC CODE: 295 MOE REGION: Northeast DISTRICT: Sault Ste. Marie

d0886

ELDORADO RESOURCES LTD - 0000820308
BLIND RIVER

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY
RADIUM IN BECQUERELS/LITRE

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		373	461	457	410	465	496	207	195	325	219	362	326	358	
RADIUM 226 FILTERED	ACTUAL	0.052	_	0.44	_	_	0.0597	0	_	0	_	_	_	0.11	
	REQUIREMENT	11		11			11	11		11				11	
NITRATES	ACTUAL	10.4	10.1	16.9	10.3	9.77	7.94	4.55	1.85	6.18	6.35	11.2	8.48	8.67	
	REQUIREMENT	373	461	457	410	465	496	207	195	325	219	362	326	358	
PHOSPHORUS TOTAL	ACTUAL	0.41	0.43	0.37	0.33	0.42	0.6	0.41	0.2	0.26	0.26	0.36	0.39	0.37	
	REQUIREMENT														
URANIUM	ACTUAL	0.06	0.043	0.034	0.037	0	0.094	0.01	0.014	0.023	0.018	0.08	0.029	0.037	
	REQUIREMENT	7.5	9.2	9.1	8.2	9.3	9.9	4.1	3.9	6.5	4.4	7.2	6.5	7.2	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Falconbridge Ltd. Falconbridge,

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT: Coniston Creek to Wanapitei River INDIRECT: 80 km. to Lake Huron (Georgian Bay)

DESCRIPTION OF ACTIVITY: Converts ore into metallic matte.

EFFLUENT QUALITY: Contains dissolved nickel and copper sulphates.

EFFLUENT TREATMENT: Neutralization with Calcium Oxide (quicklime).

DISCHARGE TYPE: Continuous decant flow from main tailings area

COMMENTS:

Total Iron not in compliance for March.
High metal values caused by abnormal flow from high spring runoff.

IMIS NUMBER: 0001700004 SIC CODE(S): 0592 MOE REGION: Northeast DISTRICT: Sudbury

d1186

FALCONBRIDGE LTD - 0001700004
FALCONBRIDGE

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		9820	17900	33040	44500	20950	27300	23900	31400	19600	28000	26900	31000	26200	
COPPER TOTAL	ACTUAL	0.39	0.18	1.98	1.3	0.42	0.27	0.24	0.63	0.4	0.84	_	0.62	0.66	
	REQUIREMENT														
IRON TOTAL	ACTUAL	0.1	4.8	40.9	44	13	19.6	6.45	5.34	10.8	15.1	13.4	29.8	17.6	1
	REQUIREMENT	9.82	17.9	33	44.5	21	27.3	23.9	31.4	19.6	28	26.9	31	26.2	
NICKEL TOTAL	ACTUAL	16	24.7	34	35.6	12.8	10.1	10.8	13.2	8.6	18.5	24.2	31	20	
	REQUIREMENT														
pH		7.1	7	6.9	6.7	6.8	7.1	7.2	7.14	7.05	7.3	7.05	7		
SUSPENDED SOLIDS	ACTUAL	110	186	264	383	260	262	196	145	220	140	124	_	208	
	REQUIREMENT	147	269	496	668	314	410	359	471	294	420	404		393	
SULPHATES TOTAL	ACTUAL	5017	10200	17200	22400	7390	12200	10800	16800	7910	11900	11700	13100	12200	
	REQUIREMENT	_	_	_	_	_	_	_	_	_	_	_	_	_	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME Falconbridge Ltd.
& PLANT LOCATION: Moose Lake Wastewater Treatment System

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT: Moose Lk. to Onaping R. to Vermillion R. to Spanish R.

INDIRECT: 125 km. to Lake Huron (North Channel)

DESCRIPTION OF ACTIVITY: Extraction from ore into Nickel, Copper and Cobalt conentrates which are shipped to smelter.

EFFLUENT QUALITY: Contains dissolved nickel and copper sulphates.

EFFLUENT TREATMENT: Neutralization with limestone slurry prior to discharge.

DISCHARGE TYPE: Continuous

COMMENTS:

February Suspended Solids not in compliance.
Exceedance due to high spring runoff.

IMIS NUMBER: 0001700301 SIC CODE(S): 0592 MOE REGION: Northeast DISTRICT: Sudbury

d1186

FALCONBRIDGE LTD - 0001703001
MOOSE LAKE WWTS

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		46782	29791	36830	84589	71741	22088	53301	52713	27399	67790	29537	44958	47293	
COPPER TOTAL	ACTUAL	1.9	4.06	1.1	1.7	1.43	0.22	0.71	1.6	0.34	0.02	4.08	0.89	1.5	
	REQUIREMENT	46.782	29.791	36.83	84.589	71.741	22.088	53.301	52.7	27.399	67.79	29.537	44.958	47.29	
IRON TOTAL	ACTUAL	65	455	92.1	293	12.6	3.1	10.1	2.1	4.7	7.4	23.1	50.51	84.9	
	REQUIREMENT														
NICKEL TOTAL	ACTUAL	55.2	39.9	51.9	95.9	93	27.6	71.4	88	27.8	47	133	55.6	65.5	
	REQUIREMENT														
pH		5.9	6	6.4	6.3	6.4	7	6.9	6.5	6.3	_	6.6	6.3		
SUSPENDED SOLIDS	ACTUAL	271	596	162	389	187	13.3	139	179	47.4	54.8	204	142	199	1
	REQUIREMENT	701.73	446.865	552.45	1270	1076	332	800	791	254	1016.85	443.055	443	709.38	
SULPHATES TOTAL	ACTUAL	28116	91269	24160	51889	21379	9211	5958	29730	9634	15809	39216	18342	30393	
	REQUIREMENT	_	_	_	_	_	_	_	_	_	_	_	_	_	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Falconbridge Ltd.
Onaping Mine
Onaping Falls

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT: Onaping River to
Vermillion River
to Spanish River

INDIRECT: 125 km to Lake Huron (North Channel)

DESCRIPTION OF ACTIVITY: Ore is mined and separated into tailings and concentrates.

EFFLUENT QUALITY: Contains dissolved nickel and copper sulphates.

EFFLUENT TREATMENT: Neutralization with Sodium Hydroxide.

DISCHARGE TYPE: Intermittent (7 months) - mine water is decanted (overflow) after treatment.

COMMENTS:

Nickel, Suspended Solids and pH not in compliance.
Low flow in spring and winter. Company will be approached to provide solution.

IMIS NUMBER: 0001700103 SIC CODE(S): 0592 MOE REGION: Northeast DISTRICT: Sudbury

d1186

FALCONBRIDGE LTD - 0001701003
ONAPING MINE

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		118	217	164	1227	164	164	262	262	262	36	76	458	284	
COPPER TOTAL	ACTUAL	0.004	0.004	0.002	0.01	0.003	0.002	0.009	0.01	0.005	0.007	0.02	0.005	0.0068	
	REQUIREMENT														
IRON TOTAL	ACTUAL	0.02	0.07	0.02	0.16	0.14	0.01	0.02	0.04	0.03	0.05	0.08	0.06	0.058	
	REQUIREMENT	0.19	0.22	0.17	1.23	0.16	0.16	0.26	0.26	0.26	0.036	0.076	0.46	0.284	
NICKEL TOTAL	ACTUAL	0.17	0.08	0.03	3.51	0.02	0.02	0.02	0.04	0.1	0.22	1.79	0.55	0.55	5
	REQUIREMENT														
pH		8.4	10	9.9	7.4	9.3	8.5	9.1	8.7	8.6	8.7	7.7	8.5		2
SUSPENDED SOLIDS	ACTUAL	60	4.52	1.54	18.4	_	0.56	1.36	2.4	1.3	1.94	7.3	1.56	9.17	3
	REQUIREMENT	1.77	3.26	2.46	18.5	2.46	2.46	3.93	3.93	3.93	0.54	1.14	6.87	4.26	
SULPHATES TOTAL	ACTUAL	60	76.7	47.9	540	67.4	84.5	128	149	144	199	387	241	177	
	REQUIREMENT	–	–	–	–	–	–	–	–	–	–	–	–	–	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Gay Lee Foods Co-op Ltd.
& PLANT LOCATION: Teeswater

INDUSTRIAL SECTOR: Food and Beverage

RECEIVING WATERBODY: DIRECT : Teeswater R.

INDIRECT: Lake Huron

DESCRIPTION OF ACTIVITY: Milk is made into butter and/or dried.

EFFLUENT QUALITY: Contains organic compounds such as proteins, sugars etc.

EFFLUENT TREATMENT: Secondary

DISCHARGE TYPE: Continuous

COMMENTS:

Not in compliance for Suspended Solids.

IMIS NO.: 0001000009

SIC CODE: 104

MOE REGION: Southwest

DISTRICT: Owen Sound

d0886

GAY LEE FOODS COOPERATIVE LTD - 0001000009

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		29.4	29.4	29.4	95.7	71.4	71.4	71.4	71.4	37.8	29.4	29.4	29.4	49.6	
BIOCHEM. OXYGEN DEMAND	ACTUAL	0.0486	0.11	0.05	0.92	0.86	0.72	0.59	0.74	0.2	0.129	0.074	0.058	0.375	
	REQUIREMENT	5.45	5.45	5.45	5.45	5.45	5.45	5.45	5.45	5.45	5.45	5.45	5.45	5.45	
SUSPENDED SOLIDS	ACTUAL	0	0.26	0.036	0.02	1.97	0.27	0.1	0.297	0.02	0.059	0	0.127	0.27	
	REQUIREMENT	5.45	5.45	5.45	5.45	5.45	5.45	5.45	5.45	5.45	5.45	5.45	5.45	5.45	
pH		7.67	7.77	7.77	7.77	7.52	7.56	7.47	7.65	7.43	7.47	7.32	7.29		

WASTEWATER DISCHARGE SUMMARY
1985

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

COMPANY NAME
& PLANT LOCATION: INCO Ltd.
Copper Cliff Creek Wastewater
Treatment Plant

RECEIVING WATERBODY: DIRECT: Junction Creek to Vermillion River to Spanish River INDIRECT: 70 km. to Lake Huron (North Channel)

DESCRIPTION OF ACTIVITY: Smelting and refining of nickel, copper and precious metals.

EFFLUENT QUALITY: Contains dissolved nickel and copper sulphates and other metals.

EFFLUENT TREATMENT: Neutralization with lime.

DISCHARGE TYPE: Continuous

COMMENTS:

Iron, Nickel (April) and pH not in compliance.
There is a review of the Certificate of Approval to amend the Iron requirement in hand.
Requirements are set by concentration maximums in a Certificate of Approval as follows: iron 0.5 ppm; copper 0.2 ppm; nickel 0.5 ppm; suspended solids 15 ppm.

IMIS NUMBER: 0001690304 SIC CODE(S): 0592 MOE REGION: Northeast DISTRICT: Sudbury

d1186

INCO LTD - 0001690304
COPPER CLIFF CREEK WASTEWATER TREATMENT PLANT

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		36300	38000	73100	95400	71400	48500	41400	28100	31200	81800	104600	75800	60500	
COPPER TOTAL	ACTUAL	5.8	5.3	13.2	13.4	9.28	4.85	5.39	7.87	3.74	8.18	9.41	3.71	7.51	
	REQUIREMENT	7.26	7.6	14.6	19.1	14.3	9.7	8.28	5.62	6.24	16.4	28.9	15.2	12.1	
IRON TOTAL	ACTUAL	22.1	18.2	51.9	47.7	33.6	24.3	32.7	14.1	11.9	27.8	58.6	8.1	29.2	4
	REQUIREMENT	18.2	19	36.7	47.7	35.7	24.3	20.7	14.1	15.6	40.9	52.3	37.9	30.3	
NICKEL TOTAL	ACTUAL	14.1	11.4	31.4	48.4	25	15.04	15.74	5.9	10.93	16.4	31.4	25.8	21	1
	REQUIREMENT	18.2	19	36.7	47.7	35.7	24.3	20.7	14.1	15.6	40.9	52.3	37.9	30.3	
AMMONIA NITROGEN	ACTUAL	283	327	629	515	357	252	187	135	131	376	–	356	323	
	REQUIREMENT	363	380	731	954	714	485	414	281	312	818		758	605	
pH		9.6	9.3	9.3	7.8	7.4	6.6	7.4	8.1	8.2	8.9	9.5	10.1		2
SUSPENDED SOLIDS	ACTUAL	200	224	607	477	428	243	290	113	93.7	327	523	606	344	
	REQUIREMENT	545	570	1097	1430	1071	728	621	422	468	1230	1570	1140	908	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Inco Ltd.
& PLANT LOCATION: Copper Cliff Nickel Refinery

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT : Spanish R.

INDIRECT: 62.5 km to Lake Huron (North Channel)

DESCRIPTION OF ACTIVITY:

EFFLUENT QUALITY:

EFFLUENT TREATMENT:

DISCHARGE TYPE: Continuous

COMMENTS:

Nickel and pH not in compliance.
Proper metal (Nickel) precipitation requires pH higher than guideline (9.5).

IMIS NO.: 0001690403

SIC CODE: 295

MOE REGION: Northeast

DISTRICT: Sudbury

d1186

INCO LTD - 0001690403
COPPER CLIFF NICKEL REFINERY

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		1570	1680	2160	2000	2340	950	588	1550	1090	2160	1690	760	1545	
NICKEL TOTAL	ACTUAL	2	0.8	0.9	1	1.17	0.29	0.39	0.71	0.34	1.41	2.2	0.67	0.999	2
	REQUIREMENT	1.57	1.68	2.16	2	2.34	0.95	0.59	1.55	1.09	2.16	1.69	0.76	1.545	
AMMONIA NITROGEN	ACTUAL	0.3	3.3	4.3	2.4	1.4	0.09	0.24	1.08	0.33	0.87	0.85	0.46	1.3	
	REQUIREMENT	15.7	16.8	21.6	20	23.4	9.5	5.88	15.5	10.9	21.6	16.9	7.6	15.45	
pH		9.4	10	9.4	9.7	10	10.6	9.8	10.2	10.7	10.2	9.5	9.4		8
SUSPENDED SOLIDS	ACTUAL	3.1	1.7	2.1	8	14	6.7	1.76	6.19	8.72	13	8.45	3.04	6.4	
	REQUIREMENT	23.6	25.2	32.4	30	35.1	14.3	8.82	23.3	16.4	32.4	25.4	11.4	23.3	

WASTEWATER DISCHARGE SURVEY
1985

COMPANY NAME: Inco Ltd. Crean Hill Mine
& PLANT LOCATION: Copper Cliff

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: *DIRECT : Spanish R,

INDIRECT: 52.5 km to Lake Huron (North Channel)

DESCRIPTION OF ACTIVITY: Mining and primary crushing of ore.

EFFLUENT QUALITY: Contains copper, nickel and iron sulphates.

EFFLUENT TREATMENT: Effluent from tailings is neutralized with lime.

DISCHARGE TYPE: Continuous

COMMENTS:

Not in compliance for Nickel for the month of March.
Exceedance due to high water flow above normal spring runoff.

IMIS NO.: 0001690809 SIC CODE: 0592 MOE REGION: Northeast DISTRICT: Sudbury

d1186

INCO LTD - 0001690809
CREAN HILL MINE

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		-	-	12200	-	-	1550	-	-	185	16400	-	-	7600	
COPPER TOTAL	ACTUAL	-	-	1.2	-	-	0.016	-	-	0.007	0.05	-	-	0.32	
	REQUIREMENT														
IRON TOTAL	ACTUAL	-	-	1.3	-	-	0.093	-	-	0.019	2.8	-	-	1.05	
	REQUIREMENT														
NICKEL TOTAL	ACTUAL	-	-	6.1	-	-	0.078	-	-	0.019	0.8	-	-	1.75	
	REQUIREMENT														
ZINC TOTAL	ACTUAL	-	-	2.4	-	-	0.016	-	-	0.019	1.2	-	-	0.909	
	REQUIREMENT														
AMMONIA	ACTUAL	-	-	2.4	-	-	0.16	-	-	0.019	1.6	-	-	1.045	
NITROGEN	REQUIREMENT			12.3			1.55			0.185	16.4			7.6	
pH		-	-	11	-	-	9.6	-	-	8.7	8.8	-	-		2
SUSPENDED	ACTUAL	-	-	36.7	-	-	1.55	-	-	0.31	16.4	-	-	13.7	
SOLIDS	REQUIREMENT			185			23.3			2.78					

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Inco Ltd. Frood Stobie Emergency Tailings Area
& PLANT LOCATION: Copper Cliff
INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT : 77.5 km to Lake Huron (North Channel)

INDIRECT:

DESCRIPTION OF ACTIVITY: Mining and concentrating sulphide ores for smelting.

EFFLUENT QUALITY: Contains nickel and iron sulphates.

EFFLUENT TREATMENT: Effluent from tailings area is neutralized with lime.

DISCHARGE TYPE: Continuous

COMMENTS:

Not in compliance for Suspended Solids.
Suspended Solids in exceedance in April due to high water flow from normal spring runoff.

IMIS NO.: 0001690205 SIC CODE: 0592 MOE REGION: Northeast DISTRICT: Sudbury

d1186

INCO LTD - 0001690205
FROOD STOBIE EMERGENCY TAILINGS AREA

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		_	_	_	1310	_	_	_	85	6	_	98	5	301	
IRON TOTAL	ACTUAL REQUIREMENT	_	_	_	228	_	_	_	0.74	0.76	_	2.15	0.13	46.3	
NICKEL TOTAL	ACTUAL REQUIREMENT	_	_	_	24.2	_	_	_	17.1	7.02	_	7.74	15.2	14.3	
ZINC TOTAL	ACTUAL REQUIREMENT	_	_	_	1.31	_	_	_	0.05	0.001	_	0.03	0.04	0.286	
SUSPENDED SOLIDS	ACTUAL REQUIREMENT	_	_	_	1701 19.7	_	_	_	0.25 1.28	0.006 0.09	_	0.29 1.47	_	425 4.52	1
pH		_	_	_	3.9	_	_	_	3	3.2	_	3.3	2.6	3.2	5

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME INCO Ltd.
& PLANT LOCATION: Garson Mine

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT: Junction Creek to Vermillion River to Spanish River INDIRECT: 86 km. to Lake Huron (North Channel)

DESCRIPTION OF ACTIVITY: Mining and primary crushing of ore.

EFFLUENT QUALITY: Contains dissolved nickel and copper sulphates.

EFFLUENT TREATMENT: Effluent from tailings area is neutralized with lime.

DISCHARGE TYPE: Continuous from mine water treatment system

COMMENTS:

Suspended Solids not in compliance for May and July.
High Solids content due to abnormal water levels from high spring runoff.
pH is operated over mining guidelines (9.5) to enhance metal precipitation.

IMIS NUMBER: 0001690700 SIC CODE(S): 0592 MOE REGION: Northeast DISTRICT: Sudbury

d1186

INCO LTD - 0001690700
GARSON MINE

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		2870	630	320	2710	2460	2880	2290	2670	2830	2850	2840	3055	2370	
COPPER TOTAL	ACTUAL	0.3	0.1	0.1	0.4	0.12	0.26	0.07	0.07	0.05	0.05	0.08	0.05	0.138	
	REQUIREMENT														
IRON TOTAL	ACTUAL	0.1	0.1	0.1	0.8	0.39	0.32	0.29	0.13	0.18	0.45	0.98	0.21	0.34	
	REQUIREMENT														
NICKEL TOTAL	ACTUAL	1	0.2	0.23	3.2	0.79	0.52	0.41	0.53	0.24	0.8	1.93	0.86	0.893	
	REQUIREMENT														
ZINC TOTAL	ACTUAL	0.3	0.1	0	0.3	0.07	0.2	0.04	0.03	0.02	0.08	0.06	0.06	0.115	
	REQUIREMENT														
AMMONIA NITROGEN	ACTUAL	11.1	4.8	2.8	10.3	19.3	18.6	4.6	21.9	14.1	11.9	15.6	18.6	12.8	
	REQUIREMENT	28.7	6.3	3.2	27.1	24.6	28.8	22.9	26.7	28.3	28.5	28.4	30.55	23.7	
pH		10.5	11.1	9.7	7.9	11.2	9.9	11.9	9.7	10.2	10.7	9.7	10.6		11
SUSPENDED SOLIDS	ACTUAL	6.9	5.5	1.37	21.7	61.6	17.3	66.5	2.7	8.5	39.9	17	9.2	21.5	2
	REQUIREMENT	43.1	9.45	4.8	40.7	36.9	43.2	34.4	40.1	42.5	42.8	42.6	45.8	35.6	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Inco Ltd. Levack Tailings Area
& PLANT LOCATION: Copper Cliff

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT : Spanish R.

INDIRECT: 113 km to Lake Huron

DESCRIPTION OF ACTIVITY: Mining and crushing operations.

EFFLUENT QUALITY: Contains dissolved nickel and copper sulphates.

EFFLUENT TREATMENT: Effluent from tailings is limed prior to discharge.

DISCHARGE TYPE: Continuous

COMMENTS:

Suspended Solids not in compliance.
Proper metal precipitation requires higher pH than guideline (9.5).
Low flow and high pH levels (batch treatment) are reasons for exceedances.

IMIS NO.: 0001690106 SIC CODE: 0592 MOE REGION: Northwest DISTRICT: Sudbury

d1186

INCO LTD - 0001590106
LEVACK TAILINGS AREA

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		1310	1640	2590	60	1130	220	1130	489	245	1710	3080	_	1140	
COPPER TOTAL	ACTUAL	0.2	0.2	0.3	0.1	0.11	0.004	0.02	0.01	0.005	0.03	0.25	0.08	0.109	
	REQUIREMENT														
IRON TOTAL	ACTUAL	0.4	0.5	1	0.01	0.11	0.03	0.01	0.12	0.08	2.55	2.19	0.08	0.59	
	REQUIREMENT														
NICKEL TOTAL	ACTUAL	1.4	1.5	9.3	0.1	0.23	0.24	0.28	0.09	0.04	10.61	1.29	0.78	2.16	
	REQUIREMENT														
ZINC TOTAL	ACTUAL	0	0	0	0.1	0.11	0.004	0.02	0.01	0.002	0.02	_	0.08	0.043	
	REQUIREMENT														
AMMONIA NITROGEN	ACTUAL	2.2	10.8	22.8	0.16	2.03	0.39	0.68	0.73	0.61	7.88	12.02	6.1	5.53	
	REQUIREMENT	13.1	16.4	25.9	0.6	11.3	2.2	11.3	4.89	2.45	17.1	30.08		12.4	
pH		11.3	10.6	8.5	11.6	10.2	11.2	10.3	11.9	11.9	9.2	10.7	11.2	10.7	10
SUSPENDED SOLIDS	ACTUAL	48.4	13.1	7.8	0.45	4.51	2.18	3.37	7.34	8.08	13.7	15.4	21.1	12.1	4
	REQUIREMENT	19.7		38.9				17	7.34	3.68	2.57		_		

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: INCO Ltd.
Nolin Creek Wastewater Treatment Plant

INDUSTRIAL ACTIVITY: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT: Nolin Creek to Junction Creek to Vermillion River to Spanish River

INDIRECT: 77 km. to Lake Huron (North Channel)

DESCRIPTION OF ACTIVITY: Metallurgical complex that smelts and refines nickel, copper and associated metals from concentrates.

EFFLUENT QUALITY: Contains a variety of dissolved metal salts.

EFFLUENT TREATMENT: Neutralized by addition of lime.

DISCHARGE TYPE: Continuous

COMMENTS:

Not in compliance.
High water levels due to spring runoff caused Suspended Solids exceedances. Also, a high pH is used to maximize metal precipitation. The Certificate of Approval is being reviewed to see if the concentration limits for Iron will be amended. The analytical method for metal determination is being changed to provide more accurate averages through lower detection limits. Effluent concentration limits (requirements) are set by Certificate of Approval as follows: iron 0.5 ppm; nickel 0.5 ppm; copper 0.2 ppm; total suspended solids 15 ppm; pH range 5.5 to 9.5.

IMIS NUMBER: 0001690601 SIC CODE: 0592 MOE REGION: Northeast DISTRICT: Sudbury

d1286

INCO LTD - 0001690601
NOLIN CREEK WASTEWATER TREATMENT

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		2400	2400	11200	27400	14800	2970	9900	6860	5640	11040	14700	4180	9460	
COPPER TOTAL	ACTUAL	0.3	0.4	1.7	3.02	3.85	0.32	3.96	0.68	1.29	3.2	4.1	0.7	1.96	
	REQUIREMENT	0.48	0.48	2.24	5.48	2.96	0.594	1.98	1.37	1.13	2.21	2.94	0.836	1.89	5
IRON TOTAL	ACTUAL	1.89	2.18	10.2	16.5	8.3	1.45	19.8	3.35	2.87	9.82	176	12.7	22.1	10
	REQUIREMENT	1.2	1.2	5.6	13.7	7.4	1.49	4.95	3.43	2.82	5.52	7.35	2.09	4.73	
NICKEL TOTAL	ACTUAL	1	0.74	5.1	8.77	7.85	0.95	7.14	1.37	1.75	6.07	7.48	2.55	4.23	5
	REQUIREMENT	1.2	1.2	5.1	8.77	7.4	1.49	4.95	3.43	2.82	5.52	7.35	2.09	4.73	
ZINC TOTAL	ACTUAL	-	-	-	-	-	-	-	-	-	0.7	-	0.1	4.85	
	REQUIREMENT														
AMMONIA NITROGEN	ACTUAL	25.9	30	33.6	-	44.5	38	48.6	46	31	32	-	20.9	29.2	3
	REQUIREMENT	24	24	112		148	29.7	99	68.6	56.4	110		41.8	94.6	
pH		10	9.9	9.9	8.2	10.1	7.2	10	9.4	10	9.9	10	11.3		9
SUSPENDED SOLIDS	ACTUAL	27.8	22.1	115	192	593	11.8	288	96	39.5	144	140	91.5	147	3
	REQUIREMENT	36	36	168	411	222	44.6	149	103	84.6	166	221	62.7	142	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: INCO LTD. Sulphur Products Dept. Sudbury (Copper Cliff) INDUSTRIAL SECTOR: Industrial Minerals

RECEIVING WATERBODY: DIRECT: to Copper Cliff tailings area

INDIRECT: 62 km. Junction Creek to Vermillion River to Spanish River

DESCRIPTION OF ACTIVITY: Sulphuric Acid is produced in the catalytic bed process from nickel refinery SO2 emissions and pyrrhotite roasting.

EFFLUENT QUALITY: Contains suspended solids (iron) and dissolved metals.

EFFLUENT TREATMENT: Treated through Copper Cliff Waste Water System (see IMIS 0001690601).

DISCHARGE TYPE: Continuous

COMMENTS:

Iron, Nickel (Oct.), pH and Suspended Solids not in compliance.
The discharge has been routed to plant tailings area where treatment will take place through the Copper Cliff Wastewater Plant.

IMIS NUMBER: 0001690502 SIC CODE(S): 3782 MOE REGION: Northeast DISTRICT: Sudbury

d0886

INCO LTD - 0001690502
SULPHUR PRODUCTS DEPT. NO 2 PLANT

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		1240	1150	1760	850	850	590	458	589	_	1050	90	510	831	
IRON TOTAL	ACTUAL	0.2	1.5	3	0.77	0.34	0.06	0.72	0.96	_	12.9	0.06	0.19	1.88	6
	REQUIREMENT	1.24	1.15	1.76	0.85	0.85	0.59	0.46	0.59		1.05	0.09	0.51	0.83	
NICKEL TOTAL	ACTUAL	0.2	0.1	0.7	0.34	0.17	0.05	0.1	0.12	_	1.91	0.03	0.18	0.36	1
	REQUIREMENT	1.24	1.15	1.76	0.85	0.85	0.59	0.46	0.59		1.05	0.09	0.51	0.83	
pH		11	9.8	9.6	9.8	9.6	9.4	9.6	12.1	_	10.7	8.4	9.9		9
DISSOLVED SOLIDS	ACTUAL	1	4	56	3	3	1	3.7	11.2	_	127	1	1	19.3	
	REQUIREMENT	_	_	_	_	_	_	_	_	_	_	_	_	_	
SUSPENDED SOLIDS	ACTUAL	1.2	4.6	56.4	3.4	2.6	0.6	3.7	11.2	_	127	0.7	1	19.3	3
	REQUIREMENT	18.6	17.3	26.4	12.8	12.8	8.85	6.87	8.84		15.8	1.35	7.65	12.5	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Rio Algom Ltd. (Panel Mill) Elliot Lake INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT: Quirke Lake to Serpent River INDIRECT: 65 km to Lake Huron (North Channel)

DESCRIPTION OF ACTIVITY: Ore is mined, milled and separated into tailings and concentrates.

EFFLUENT QUALITY: Contains metal salts, ammonia compounds, and radioactive materials

EFFLUENT TREATMENT: Addition of barium chloride and lime followed by releasing effluent into a polishing pond.

DISCHARGE TYPE: Continuous

COMMENTS:

In compliance with AECB licensing requirements.
Radioactivity limit was set by Canada's Atomic Energy Control Board.

IMIS NUMBER: 0001670207 SIC CODE(S): 057 MOE REGION: Northeast DISTRICT: Sault Ste. Marie

d0886

RIO ALGOM LTD - 0001670207
(Panel Mill)
ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY
RADIUM UNITS IN BEQUERELS/LITRE

pH LIMIT 5.5 -+9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		10720	9430	9380	1390	12100	9750	8104	6690	6690	7470	7930	8350	8160	
pH		8.3	8.1	8.6	7.8	8.2	8.1	7.9	7.5	7.7	7.9	7.8	8.1		
RADIUM 226 FILTERED	ACTUAL	0.107	0.1	0.124	0.119	0.134	0.13	0.073	0.081	0.073	0.149	0.17	0.163	0.119	
	REQUIREMENT	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	
RADIUM 226 TOTAL	ACTUAL	0.249	0.317	0.272	0.444	0.278	0.169	0.221	0.123	0.101	0.183	0.26	0.238	0.245	
	REQUIREMENT														
COPPER TOTAL	ACTUAL	0.096	0.09	0.094	0.02	0.38	0.11	0.05	0.07	0.07	0.07	0.07	0.07	0.09	
	REQUIREMENT	6.4	5.66	5.63	0.83	7.26	5.85	4.86	4.01	4.01	4.48	4.76	5.01	4.9	
IRON TOTAL	ACTUAL	6.11	0.66	1.97	0.26	1.82	1.27	0.24	0.87	0.13	0.22	0.4	0.9	1.14	
	REQUIREMENT	10.7	9.43	9.38	1.39	12.6	9.75	8.1	6.69	6.69	7.47	7.93	8.35	8.16	
NICKEL TOTAL	ACTUAL	0.27	0.21	0.188	0.04	0.05	0.15	0.18	0.19	0.17	0.29	0.22	0.23	0.22	
	REQUIREMENT	10.7	9.43	9.38	1.39	12.1	9.75	8.1	6.69	6.69	7.47	7.93	8.35	8.16	
LEAD TOTAL	ACTUAL	0.12	0.66	0.3	0.04	0.06	0.24	0.32	0.42	0.12	0.37	0.23	0.25	0.27	
	REQUIREMENT	4.29	3.77	3.75	0.556	4.84	3.9	3.24	2.68	2.68	2.99	3.17	3.34	3.26	
SUSPENDED SOLIDS	ACTUAL	10.7	18.9	9.38	1.39	12.1	9.75	16.2	6.69	6.69	14.9	15.9	16.7	8.14	
	REQUIREMENT	161	142	141	20.9	182	146	122	100	100	112	119	125	122	
ZINC TOTAL	ACTUAL	0.15	0.12	1.03	0.02	0.17	0.09	0.05	0.05	0.05	0.07	0.13	0.18	0.1	
	REQUIREMENT	10.7	9.43	9.38	1.39	12.1	9.75	8.104	6.69	6.69	7.47	7.93	8.35	8.16	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Rio Algom Ltd. (Quirke Mill) Elliot Lake

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT: Serpent River

INDIRECT: 67 km to Lake Huron (North Channel)

DESCRIPTION OF ACTIVITY: Ore is mined, milled and separated into tailings and concentrates. Ammonia - based compounds are used in the recovery of uranium.

EFFLUENT QUALITY: Contains dissolved metal salts, ammonia compounds, and radioactive materials.

EFFLUENT TREATMENT: Treatment consists of settling ponds, barium chloride addition to absorb Radium 226 with lime addition to adjust pH and discharge to river.

DISCHARGE TYPE: Continuous

COMMENTS:

Iron not in compliance.
Out of compliance with respect to AECB license requirements for suspended solids.
Radioactivity limit was set by Canada's Atomic Energy Control Board.

IMIS NUMBER: 0001670108 SIC CODE(S): 057 MOE REGION: Northeast DISTRICT: Sault Ste. Marie

d0886

RIO ALGOM LTD - 0001670108
(QUIRKE MILL)
ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY
RADIUM UNITS IN BEQUERELS/LITRE

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		17400	12100	16900	22500	20700	14100	13000	8740	21200	28200	10500	7540	16100	
pH		8.63	8.46	8.44	8.43	8.32	7.99	7.18	7.68	8.23	7.53	7.78	7.27		
RADIUM 226 FILTERED	ACTUAL	0.186	0.073	0.063	0.054	0.322	0.079	0.072	0.07	0.044	0.037	0.065	0.061	0.099	
	REQUIREMENT	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	
RADIUM 226 TOTAL	ACTUAL	0.234	0.098	0.09	0.108	0.452	0.134	0.109	0.136	0.088	0.091	0.199	0.085	0.152	
	REQUIREMENT														
COPPER TOTAL	ACTUAL	0.26	0.36	0.51	0.65	0.72	0.2	0.23	0.09	0.28	0.34	0.4	0.17	0.35	
	REQUIREMENT	10.4	7.26	10.1	13.5	12.4	8.46	7.8	5.24	12.7	16.9	6.3	4.52	9.66	
IRON TOTAL	ACTUAL	30.71	58.3	87.9	112	33.5	21	61.9	23.5	32.4	46	143	291	111	12
	REQUIREMENT	17.4	12.1	16.9	22.5	20.7	14.1	13	8.74	21.2	28.2	10.5	7.54	16.1	
NICKEL TOTAL	ACTUAL	0.54	0.61	0.76	0.77	0.68	0.25	1.18	0.28	1.31	1.8	1	0.66	0.87	
	REQUIREMENT	17.4	12.1	16.9	22.5	20.7	14.1	13	8.74	21.2	28.2	10.5	7.54	16.1	
LEAD TOTAL	ACTUAL	0.38	0.97	0.68	0.99	0.95	0.16	0.29	0.16	0.68	0.82	0.41	0.14	0.55	
	REQUIREMENT	6.96	4.84	6.76	9	8.28	5.64	5.2	3.5	8.48	11.3	4.2	3.02	6.44	
SUSPENDED SOLIDS	ACTUAL	104	133	152	180	104	70.5	91	43.7	127	197	200	128	145	2
	REQUIREMENT	261	182	254	338	311	212	195	131	318	423	158	113	242	
ZINC TOTAL	ACTUAL	0.4	0.12	0.13	0.79	0.14	0.07	0.77	0.44	1	0.96	0.65	0.41	0.53	
	REQUIREMENT	17.4	12.1	16.9	22.5	20.7	14.1	13	8.74	21.2	28.2	10.5	7.54	16.1	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Kimberly Clark of Canada
& PLANT LOCATION: Huntsville

INDUSTRIAL SECTOR: Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT : Muskoka R.

INDIRECT:

DESCRIPTION OF ACTIVITY: Converts pulp into personal paper products

EFFLUENT QUALITY: Practically zero effluent

EFFLUENT TREATMENT: Conventional and tertiary

DISCHARGE TYPE: Intermittent

COMMENTS:

In compliance.
Direct discharge seasonal. Approxiamtely 6 months out of the year.
Alternate disposal is land spraying. During May - June and August - October company sprayed on approved area - no discharge.

IMIS NO.: 0000830109 SIC CODE: 271 MOE REGION: Central DISTRICT: Barrie

d0886n2486

KIMBERLY CLARK OF CANADA LTD - 0000830109
HUNTSVILLE MILL

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		762	762	909	1037	_	_	659	_	_	_	1055	873	864	
CHEMICAL OXYGEN DEMAND	ACTUAL	41.4	51.1	91.8	11.5	_	_	42.8	_	_	_	85.5	64.6	68.3	
	REQUIREMENT														
DISSOLVED SOLIDS	ACTUAL	2.29	2.29	50.8	62.2	_	_	52.7	_	_	_	6.33	1.75	4.07	
	REQUIREMENT														
PHOSPHORUS TOTAL	ACTUAL	0.005	0.002	0.005	0.005	_	_	0.007	_	_	_	0.008	0.003	0.005	
	REQUIREMENT	0.762	0.762	0.909	1.037			0.659				1.055	0.873	0.864	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: MacMillan Bloedel Limited
Sturgeon Falls Division
Sturgeon Falls

INDUSTRIAL SECTOR: Pulp and Paper

RECEIVING WATERBODY: DIRECT: Sturgeon River to Lake Nipissing to French River Main Channel

INDIRECT: 124 km to Lake Huron (Georgian Bay)

DESCRIPTION OF ACTIVITY: Two different processes are used. Chips are thermal refined and glued to form hardboard. Chips are converted by the neutral sulphite semi-chemical process into corrugating medium.

EFFLUENT QUALITY: Contains suspended solids (bark, wood, pulp) and dissolved organics.

EFFLUENT TREATMENT: Primary. Unique secondary is under development.

DISCHARGE TYPE: Continuous, seven days a week.

COMMENTS:

BOD not in compliance.
Loading requirements are based on the Control Order limit for suspended solids and probable future limit for biochemical oxygen.
The final effluent was sampled once during 1985 and tested by an aerated 96-hr. rainbow trout bioassay. The LC50 was estimated to have been equal to 14.2%.

MOE REGION: Northeast

DISTRICT: North Bay

IMIS NUMBER: 0001530005

SIC CODE: 271

MACMILLAN BLOEDEL LTD - 0001530005
STURGEON FALLS

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		11100	13300	10440	11600	10910	10700	10640	10980	12400	11600	12300	10340	11400	
BIOCHEM. OXYGEN DEMAND	ACTUAL	39000	48200	33200	33900	33100	43000	40760	41400	47300	46300	50750	44070	41800	12
	REQUIREMENT	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	
SUSPENDED SOLIDS	ACTUAL	2110	2910	2230	2280	2690	2370	2480	2390	2600	2550	2330	2200	2430	
	REQUIREMENT	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Mitsubishi Canada Inc.
& PLANT LOCATION: Midland
INDUSTRIAL SECTOR:

RECEIVING WATERBODY: DIRECT : Wye River

INDIRECT: Lake Huron (Georgian Bay)

DESCRIPTION OF ACTIVITY: Manufactures television tubes.

EFFLUENT QUALITY: Contains trace organics

EFFLUENT TREATMENT:

DISCHARGE TYPE: Continuous

COMMENTS:

In compliance.
Certificate of Approval limits fluoride discharge to 141 kg per four week period.

IMIS NO.: 0001880004 SIC CODE: 334 3399 MOE REGION: Central DISTRICT: Barrie

d0886

MITSUBISHI ELECTRONICS IND. CANADA INC - 0001880004

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		1420	2000	2470	2290	2040	1470	8270	8720	8820	9090	9220	7880	5310	
pH		7.6	7.3	7.2	7.4	7.9	8.3	8.2	8.5	8	7.6	7.8	7.8		
CHROMIUM +6	ACTUAL	0.142	0.2	0.25	0.23	0.2	0.18	1.08	1.05	1.15	0.91	0.69	0.47	0.546	
	REQUIREMENT	1.42	2	2.47	2.29	2.04	1.47	8.27	8.72	8.82	9.09	9.22	7.88	5.31	
FLUORIDE	ACTUAL	1.13	2.4	2.72	4.35	3.05	3.9	34.7	42.7	31.7	23.8	37.2	34.9	14.5	
	REQUIREMENT														
TOTAL SOLIDS	ACTUAL	526	833	1200	1030	724	498	2620	2710	2690	3310	4840	3700	2090	
	REQUIREMENT														
DISSOLVED SOLIDS	ACTUAL	15.4	20.4	24.5	25	25.9	10.7	78.6	56.7	62.6	72.4	48.7	40.1	45.7	
	REQUIREMENT														

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Ontario Hydro Bruce N.P.G.S.
Domestic Sewage Treatment Plant
Tiverton

INDUSTRIAL ACTIVITY: Electric Power Generation

RECEIVING WATERBODY: DIRECT: Lake Huron

INDIRECT:

DESCRIPTION OF ACTIVITY: Plant treats sanitary wastes from the generating station complex

EFFLUENT QUALITY: Hot water

EFFLUENT TREATMENT: Secondary sewage treatment with phosphorous removal.

DISCHARGE TYPE:

COMMENTS:

In compliance.
Reportng procedures at present time do not readily allow reporting of monthly data.

IMIS NUMBER: 0001840107 SIC CODE: 572 MOE REGION: Southwest DISTRICT: Owen Sound

d0886

ONTARIO HYDRO 0001840107
BRUCE N.P.G.S
DOMESTIC SEWAGE TREATMENT PLANT

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW														3070	
PHOSPHORUS TOTAL	ACTUAL													0.67	
	REQUIREMENT													3.07	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Ontario Hydro Bruce N.P.G.S.
Heavy Water Plant
Tiverton

INDUSTRIAL ACTIVITY: Electric Power Generation

RECEIVING WATERBODY: DIRECT: Lake Huron

INDIRECT:

DESCRIPTION OF ACTIVITY: Heavy water is produced for use in nuclear reactors.

EFFLUENT QUALITY: Hot water and dissolved hydrogen

EFFLUENT TREATMENT: Continuous

DISCHARGE TYPE:

COMMENTS:

In compliance.

IMIS NUMBER: 0001840107   SIC CODE: 572   MOE REGION: Southwest   DISTRICT: Owen Sound

d0886

ONTARIO HYDRO 0001840107
BRUCE N.P.G.S
HEAVY WATER PLANT

ALL LOADS IN KG/DAY
ALL FLOWS IN MILLION CUBIC METRES/DAY
TEMPERATURES IN DEGREES CELSIUS

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	% OF OPERATING HOURS EXCEEDED	TOTAL EXCEEDENCES
FLOW		1.94	2.15	1.88	1.65	1.43	1.77	1.7	1.67	1.24	1.68	1.73	1.67	1.71		
SULPHIDES	ACTUAL	1.1	1.3	1.2	5	3.9	4.9	5.6	5.5	3.2	2.5	3.9	4.2	4.35		
	REQUIREMENT	215	215	215	215	215	215	215	215	215	215	215	215	215		
TEMPERATURE RISE (MAX.)	ACTUAL	8.8	8.4	9.2	8.6	4.6	9.8	9.3	8.6	6.4	6.7	9.3	10.2	8.3		
	GUIDELINE	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1		
MAX. EFFLUENT TEMPERATURE	ACTUAL	10.4	8.9	11.2	13.2	12.6	20.8	26.1	26.5	24.9	22	19.1	14.1	17.5		
	GUIDELINE	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2		

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME Ontario Hydro
& PLANT LOCATION: Bruce N.P.G.S. Generating Stns. A & B
Tiverton

INDUSTRIAL ACTIVITY: Electric Power Generation

RECEIVING WATERBODY: DIRECT: Lake Huron

INDIRECT:

DESCRIPTION OF ACTIVITY: Nuclear Power

EFFLUENT QUALITY: Hot water

EFFLUENT TREATMENT: Dilution (once through condenser cooling water).

DISCHARGE TYPE: Continuous

COMMENTS:

Both in compliance.

IMIS NUMBER: 0001840107 SIC CODE: 572 MOE REGION: Southwest DISTRICT: Owen Sound

d0886

ONTARIO HYDRO 0001840107
BRUCE N.P.G.S
STATION A & B

TEMPERATURES IN DEGREES CELSIUS
ALL FLOWS IN MILLION CUBIC METERS/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	% OF OPERATING HOURS EXCEEDED
STATION A															
FLOW		12.02	42.45	13	11.49	5.47	11.17	13.89	14.24	10.52	8.9	14.16	30.4	15.64	
TEMPERATURE RISE (MAX)	ACTUAL	10.1	9.7	10.6	8.4	3.5	8.7	9.3	9.5	7.4	6.3	10.1	10.5	8.7	
	GUIDELINE	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	
MAX. EFFLUENT TEMPERATURE	ACTUAL	11.9	10.5	12.4	12.3	11.3	17.9	25.6	27.2	21	16.4	18.2	13.1	16.5	
	GUIDELINE	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	
STATION B															
FLOW		8.01	6.83	5.43	9.23	5.07	8.74	10.89	9.36	10.23	9.39	9.43	7.65	8.36	
TEMPERATURE RISE (MAX)	ACTUAL	8.6	8.8	5.9	8.7	6.1	7.4	8.3	9.7	8.3	8.8	8.3	9.2	8.2	
	GUIDELINE	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	
MAX. EFFLUENT TEMPERATURE	ACTUAL	9.9	9.6	7.1	11.8	12.6	16.3	22.8	25.1	24.9	22.2	15.8	11.6	15.8	
	GUIDELINE	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME Rio Algom Ltd.
& PLANT LOCATION: (Stanleigh Mill)

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT: Serpent River

INDIRECT: Lake Huron

DESCRIPTION OF ACTIVITY: Ore is separated into tailings and concentrates.

EFFLUENT QUALITY: Contains dissolved metal salts and radioactive material.

EFFLUENT TREATMENT: Effluent system consists of settling basin, sequential addition of barium chloride and lime, filtration plant to remove solids.

DISCHARGE TYPE: Continuous

COMMENTS:

Out of compliance with respect to AECB license requirements for iron.

IMIS NUMBER: 0001670306 SIC CODE(S): 057 MOE REGION: Northeast DISTRICT: Sault Ste. Marie

d0886

RIO ALGOM LTD - 0001670306
(STANLEIGH MILL)
ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY
RADIUM UNITS IN BEQUERELS/LITRE

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		24800	27400	27100	26300	23300	28300	26700	21900	29300	28900	30600	31500	27200	
pH		6.93	7.37	7.53	7.17	7.23	7.49	6.7	6.97	7.5	7.04	6.94	7.6		
RADIUM 226 FILTERED	ACTUAL	0.023	0.046	0.023	0.037	0.037	0.04	0.04	0.037	0.039	0.039	0.046	0.039	0.039	
	REQUIREMENT	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	
RADIUM 226 TOTAL	ACTUAL	0.09	0.095	0.129	0.128	0.302	0.157	0.204	0.192	0.218	0.421	0.484	0.574	0.249	
	REQUIREMENT														
COPPER TOTAL	ACTUAL	0.37	0.14	1.84	0.18	0.23	0.17	0.16	0.07	0.44	0.43	0.34	0.35	0.38	
	REQUIREMENT	14.9	16.4	16.3	15.8	14	17	16	13.1	17.6	17.3	18.4	18.9	16.3	
IRON TOTAL	ACTUAL	13.1	10.7	14.6	29.7	33.1	9.91	4.81	10.1	18.5	39	54.2	65.8	24.5	5
	REQUIREMENT	24.8	27.4	27.1	26.3	23.3	28.3	26.9	21.9	29.3	28.9	30.6	31.5	27.2	
NICKEL TOTAL	ACTUAL	0.74	0.82	0.49	0.53	0.28	0.28	0.61	0.11	0.62	0.75	0.98	0.91	0.57	
	REQUIREMENT	24.8	27.4	27.1	26.3	23.3	28.3	26.9	21.9	29.3	28.9	30.6	31.5	27.2	
LEAD TOTAL	ACTUAL	0.89	1.1	0.27	0.34	0.4	0.4	0.4	0.33	0.47	0.78	0.49	0.41	0.49	
	REQUIREMENT	9.92	11	10.8	10.5	7.33	11.3	10.7	8.76	11.7	11.6	12.2	12.6	10.9	
SUSPENDED SOLIDS	ACTUAL	74.4	54.8	108	132	210	56.6	134	65.7	147	260	306	347	190	
	REQUIREMENT	372	411	407	395	350	425	401	329	440	434	459	473	408	
ZINC TOTAL	ACTUAL	0.67	0.55	0.97	1.74	1.02	1.39	1.55	1.27	1.76	2.11	2.39	2.87	1.5	
	REQUIREMENT	24.8	27.4	27.1	26.3	23.3	28.3	26.9	21.9	29.3	28.9	30.6	31.5	27.2	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Sherman Mine
& PLANT LOCATION: Temagami

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT : Lake Temagami

INDIRECT: Sturgeon R. to Lake Nipissing

DESCRIPTION OF ACTIVITY: Open pit mining. Concentrating iron ore to pellets.

EFFLUENT QUALITY: Contains suspended solids (iron) and dissolved inorganic salts

EFFLUENT TREATMENT: Tailings impoundment.

DISCHARGE TYPE: Continuous

COMMENTS:

Copper not in compliance.
Limits based on guidelines for Ontario mine tailings.

IMIS NO.: 0001540004 SIC CODE: 058 MOE REGION: Northeast DISTRICT: North Bay

d0886

SHERMAN MINE - 0001540004

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW (Estimated)		0	0	0	10700	0	10700	10700	0	0	0	0	0	2675	
pH		_	_	_	7	_	7	7.4	_	_	_	_	_	7.1	
COPPER TOTAL	ACTUAL REQUIREMENT	_	_	_	0.1 10.7	_	0.3 10.7	0.1 10.7	_	_	_	_	_	0.04 10.7	
SUSPENDED SOLIDS	ACTUAL REQUIREMENT	_	_	_	44 161	_	22 161	11 161	_	_	_	_	_	6 161	
ZINC TOTAL	ACTUAL REQUIREMENT	_	_	_	_	_	1 10.7	1 10.7	_	_	_	_	_	0.1 10.7	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME Canadian Industries Ltd.
& PLANT LOCATION: Lambton Works
Courtright

INDUSTRIAL ACTIVITY: Inorganic Chemicals

RECEIVING WATERBODY: DIRECT: St. Clair River

INDIRECT:

DESCRIPTION OF ACTIVITY: Sulphuric acid, phosphate ore and nitrogen are converted into several grades of fertilizer.

EFFLUENT QUALITY: Contains dissolved inorganic compounds such as phosphorous and ammonia

EFFLUENT TREATMENT:

DISCHARGE TYPE: continuous at shore

COMMENTS:

In compliance.

IMIS NUMBER: 0000390203 SIC CODE: 372 MOE REGION: Southwest DISTRICT: Sarnia

d0886

CANADIAN INDUSTRIES LTD - 0000390203

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		295000	295000	295000	295000	357000	382000	400000	432000	394000	340000	351000	345000	348000	
FLUORIDE TOTAL	ACTUAL REQUIREMENT	71 _	30 _	38 _	29.5 _	35.6 _	38.1 _	40.2 _	43.1 _	39.4 _	34 _	35.1	34.5	39.1	
AMMONIA NITROGEN	ACTUAL REQUIREMENT	249 2950	605 2950	304 2950	176 2950	198 3570	342 3820	152 4000	548 4320	770 3940	821 3400	619 3510	714 3450	458 3480	
NITRATES AND NITRITES	ACTUAL REQUIREMENT	192 _	303 _	268 _	115 _	105 _	188 _	152 _	192 _	232 _	296 _	379	371	233	
PHOSPHORUS TOTAL	ACTUAL REQUIRED	65 295	41 295	61 295	11.8 295	14.2 357	15.2 382	16.1 400	17.2 432	15.8 394	13.6 340	14 351	13.8 345	24.9 348	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME St. Marys Paper Inc.
& PLANT LOCATION: Sault Ste. Marie

INDUSTRIAL SECTOR: Pulp and Paper Mill

OWNERSHIP CHANGED June 1, 1984. Formerly known as: Abitibi Paper Company Ltd.

RECEIVING WATERBODY: DIRECT: St. Mary's River INDIRECT:

DESCRIPTION OF ACTIVITY: Purchased Kraft pulp is added to the pulp made by the stone groundwood process to make paper specialties. Clay line added Dec/84. Now a slush pulp multi-product mill (with no white water return)

EFFLUENT QUALITY: Contains suspended solids (bark, clay, wood) and soluble organic compounds like sugars.

EFFLUENT TREATMENT: Clarifier with scum collector on overflow. Underflow solids are denatured and burned.

DISCHARGE TYPE: Continuous through a submerged diffuser

COMMENTS:

In compliance with conditions of Certificate of Approval.
The final effluent was sampled once during 1985 and tested by an aerated 96-hr. rainbow trout bioassay.
The LC50 was estimated to have been equal to 29.1%.

IMIS NUMBER: 0000860304 SIC CODE(S): 271 MOE REGION: Northeast DISTRICT: Sault Ste. Marie

d0886

ST. MARY'S PAPER INC. - 0000860304

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		26050	29300	29500	29500	29300	31500	31200	27600	28010	25700	25030	26100	28200	
SUSPENDED SOLIDS	ACTUAL	2900	3100	3000	3400	3200	3100	3000	3200	3100	3900	3500	2700	3200	
	REQUIREMENT	5000	5000	5200	4600	5000	5700	4900	5400	5300	5600	5300	5000	5200	
BIOCHEM. OXYGEN DEMAND	ACTUAL	4400	2100	3700	5900	5200	4300	3400	2500	2900	2400	3200	2600	3600	
	REQUIREMENT														

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Chesapeake and Ohio Railway Co. Northern Reg.
& PLANT LOCATION: St. Thomas

INDUSTRIAL ACTIVITY: Wholesale and retail trade

RECEIVING WATERBODY: DIRECT : Kettle Cr.

INDIRECT:

DESCRIPTION OF ACTIVITY:

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Two oil separation lagoons

DISCHARGE TYPE: Batch

COMMENTS:

In compliance.

IMIS NO.: 0001010008 SIC CODE: 503 MOE REGION: Southwest DISTRICT: London

d0886

CHESAPEAKE AND OHIO RAILWAY CO. - 0001010008

CONCENTRATIONS IN MG/L

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
pH		6.85	6.45	7.3	7.1	7.9	7.3	7	7.2	7	7.9	7.2	8		
OIL AND GREASE	ACTUAL	1.9	2	1.6	2.5	3.5	6.5	5.2	6.2	5.3	2.2	0	3.7	3.38	
	REQUIREMENT	15	15	15	15	15	15	15	15	15	15	15	15	15	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: The Algoma Steel Corporation Ltd. Sault Ste. Marie

INDUSTRIAL SECTOR: Iron and Steel

RECEIVING WATERBODY: DIRECT: St. Mary's River

INDIRECT: East Davignon Creek

DESCRIPTION OF ACTIVITY: Iron (blast furnaces & foundry) and steel from coal (coke) and iron concentrates/pellet.

EFFLUENT QUALITY: Contains suspended solids (coal, iron, rust) and coal tar compounds (ammonia, cyanide oil and grease, phenols)

EFFLUENT TREATMENT: Clarifiers, settling basins and brill skimmers.

DISCHARGE TYPE: continuous; 7 outfalls; terminal basin discharges through a submerged diffuser

COMMENTS:
The existing Control Order issued in June, 1982 and amended in June, 1983 establishes the following abatement schedule and limits:
Terminal Basin - Mar. 31, 1987 Sulphides 0.2 mg/L; Ammonia and cyanide limited in combination based on toxicity considerations
- Mar. 31, 1988 Solvent Extractables 2727 kg/day; susp. solids 8750 kg/day
- Jun. 30, 1989 Phenolics 22.7 kg/day
- Mar. 31, 1990 Solvent Extractables 1364 kg/day; susp. solids 6136 kg/day

24" Cold Mill Sewer- April 5, 1986 Susp. Solids 15 mg/L; Solvent Extractables 15 mg/L; Dissolved Iron 1 mg/L

IMIS NUMBER: 0000040006 SIC CODE(S): 291 292 298 MOE REGION: Northeast DISTRICT: Sault Ste. Marie

d0886

THE ALGOMA STEEL CORP LTD - 0000040006
TOTAL COMPLEX
ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY
pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		509600	509600	510100	498700	514700	510100	499200	509600	798700	506000	504600	504600	506300	
CYANIDE FREE	ACTUAL	62	80	71	55	61	43	33	51	115	100	80	96	70.6	
	REQUIREMENT														
CHEMICAL OXYGEN DEMAND	ACTUAL	12300	7480	17030	9220	11400	12300	15500	20062	9630	30850	15800	15100	14700	
	REQUIREMENT														
IRON TOTAL	ACTUAL	3923	5169	5221	5547	4288	5076	3593	2854	2703	4597	2226	4053	4104	
	REQUIREMENT														
NH3 - NITROGEN	ACTUAL	2860	4550	4710	3200	4370	2920	2520	3250	3280	5260	5230	5890	4002	
	REQUIREMENT														
pH		8.2	8.4	8.2	8	8.3	8.1	8.1	8.3	7.9	7.8	7.9	7.8		
PHENOLS	ACTUAL	106	103	68.2	99.2	172	102	66.2	68.2	96.3	98.3	103	137	102	
	REQUIREMENT														
DISSOLVED SOLIDS	ACTUAL	42500	45400	51600	46000	52100	55600	45000	41400	41700	48200	49700	46900	47175	
	REQUIREMENT														
SUSPENDED SOLIDS	ACTUAL	7320	8620	9280	9890	11800	9240	7120	7650	7210	7250	10077	7520	8580	
	REQUIREMENT														
OIL AND GREASE	ACTUAL	1570	2330	1720	1540	1630	3016	2180	2980	1780	1490	815	1550	1880	
	REQUIREMENT														
SULPHIDES	ACTUAL	44	82	48	30	31	34	30	31	29	33	34	134	46.7	
	REQUIREMENT														
SULPHATES TOTAL	ACTUAL	1012	1440	2220	1620	1860	1560	1020	1560	1043	696	2300	974	1440	
	REQUIREMENT														
ZINC TOTAL	ACTUAL	4	4	7	8	2	8	6	10	7	8	33	8	8.9	
	REQUIREMENT														

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Dow Chemical Canada Inc. Sarnia

INDUSTRIAL ACTIVITY: Organic Chemicals, Synthetic Fibres

RECEIVING WATERBODY: DIRECT: St. Clair River

INDIRECT:

DESCRIPTION OF ACTIVITY: Brine and feed from the petroleum refineries are used to make a wide range of chlorine related products.

EFFLUENT QUALITY: Contains a great variety of chlorinated hydrocarbons

EFFLUENT TREATMENT:

DISCHARGE TYPE: continuous through seven outfalls

COMMENTS:

In compliance

IMIS NUMBER: 0000910109 SIC CODE: 373 MOE REGION: Southwest DISTRICT: Sarnia

d0886

DOW CHEMICAL CANADA INC - 0000910109

ALL LOADS IN KG/DAY
ALL FLOWS IN 1000 CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		305	763	753	763	752	743	787	787	812	753	812	919	746	
TOTAL ALKALINITY	ACTUAL	4380	360	490	520	70	340	240	480	30	0	0	0	576	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
pH		8.48	8.33	8.24	8.39	8.2	8.21	8.24	8.44	8.29	8.24	8.09	8.23		
PHENOLS	ACTUAL	2.53	1.49	3.23	5.05	1.96	2.05	3.16	3.14	2.78	-	2.49	2.43	2.76	
	REQUIREMENT	6.1	15.3	15.3	15.3	15	14.9	15.7	15.7	16.2		16.2	18.4	14.9	
SUSPENDED SOLIDS	ACTUAL	2790	2360	3520	2850	1730	1780	2200	2470	1140	1230	1520	1870	2120	
	REQUIRED	4580	11400	11400	11400	11300	11100	11800	11800	12200	11300	12200	[illegible]	11200	
TOTAL CARBON	ACTUAL	1470	1160	1000	1020	740	410	510	560	420	500	650	930	781	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION:	Dupont Canada Inc. Corunna	INDUSTRIAL ACTIVITY:	Organic Chemical, Synthetic Fibres

RECEIVING WATERBODY: DIRECT: St. Clair River

INDIRECT:

DESCRIPTION OF ACTIVITY: Feedstock (ethylene) from the petroleum refineries in Sarnia is used to make plastics.

EFFLUENT QUALITY: Contains organic compounds at trace levels

EFFLUENT TREATMENT:

DISCHARGE TYPE: continuous at shore

COMMENTS:

September monthly exceedance due to reported spill.
Company normally in compliance.

IMIS NUMBER: 0000080309 SIC CODE: 373 MOE REGION: Southwest DISTRICT: Sarnia

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DU PONT CANADA INC - 0000080309
SARNIA

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		39900	42300	42300	45200	36800	50900	51800	52100	51700	44400	41900	36600	44600	
PHENOLS	ACTUAL	<0.05	<0.05	<0.05	0.05	0.26	0.05	0.14	0.09	4.82	0.18	0.13	0.1	0.721	1
	REQUIREMENT	0.8	0.856	0.85	0.9	0.74	1	1.04	1.04	1.3	0.89	0.84	0.73	0.89	

THE ALGOMA STEEL CORP LTD - 0000040006
(TERMINAL BASIN)
ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		340500	340000	340500	329000	345000	340500	329600	340000	320000	328200	342800	342800	336700	
CYANIDE FREE	ACTUAL REQUIREMENT	58	78	68	53	59	37	20	31	64	69	69	69	86	
CHEMICAL OXYGEN DEMAND	ACTUAL REQUIREMENT	12300	7480	17030	9220	11400	12300	15500	20062	9630	30850	15800	15100	14700	
IRON TOTAL	ACTUAL REQUIREMENT	3610	4490	4840	3720	3690	4530	2930	2520	2150	3680	1650	3330	3430	
AMMONIA NITROGEN	ACTUAL REQUIREMENT	2830	4520	4670	3160	4310	2860	2470	3200	3210	5190	5180	5860	3950	
pH		8.4	8.7	8.3	7.9	8.5	7.9	7.8	8	8.4	8.6	8.7	8.7	8.3	
PHENOLS	ACTUAL REQUIREMENT	102	102	68	99	172	102	66	68	90	98	103	137	101	
DISSOLVED SOLIDS	ACTUAL REQUIREMENT	29300	34700	38800	32600	38300	41500	35300	29900	31500	33700	28800	32900	34300	
SUSPENDED SOLIDS	ACTUAL REQUIREMENT	6470	7420	8170	7900	8700	7830	5270	6120	5780	5910	5830	5830	6770	
OIL AND GREASE	ACTUAL REQUIREMENT	1360	2040	1360	1320	1380	2720	1980	2720	1610	1310	686	1370	1650	
SULPHIDES	ACTUAL REQUIREMENT	44	82	48	30	31	34	30	31	29	33	34	134	46.7	

THE ALGOMA STEEL CORP LTD - 0000040006
(24 INCH COLD MILL ACID SEWER)
ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		10910	10910	10910	10910	10910	10910	10910	10910	9547	9547	9547	9547	10456	
pH		6.9	6.6	6.6	5.8	6.2	5.8	6.5	6.7	5.7	5	6.3	6.2		1
SUSPENDED SOLIDS	ACTUAL REQUIREMENT	98	131	120	175	185	196	240	295	181	115	162	143	167	
OIL AND GREASE	ACTUAL REQUIREMENT	65	207	196	131	131	142	120	98	76	86	48	86	115	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: American Standard, Div of Wabco Standard Inc., Cambridge

INDUSTRIAL SECTOR: Metal, Plastic Fabricating and Finishing

RECEIVING WATERBODY: DIRECT: Speed River to Grand River

INDIRECT: 159 km to Lake Erie

DESCRIPTION OF ACTIVITY: Sinks, tubs, etc. are fabricated and enamelled.

EFFLUENT QUALITY: Contains heavy metals

EFFLUENT TREATMENT: pH adjustment, precipitation, flocculation and sedimentation
5 days a week, 230 days a year

DISCHARGE TYPE: continuous flow 7 am to 12 pm through a drain

COMMENTS:

Not in compliance.
Discharge quality consistently met limits for zinc and nickel but not for iron, suspended solids and pH. Company's optimization of its wastewater treatment has improved discharge quality to where it has reported compliance in the latter part of 1985 and through 1986. Monthly requirements are based on stream assimilation study and are expressed as loadings and not as concentrations.

IMIS NUMBER: 0001470004 **SIC CODE:** 3041 3042 **MOE REGION:** West Central **DISTRICT:** Cambridge

d0886

AMERICAN STANDARD DIVISION OF WABCO STANDARD INC - 0001470004
(FORMERLY SOLARWARE)

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY
(FLOW LIMIT 454)

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		365	365	441	365	365	365	365	365	365	365	365	365	371	
IRON TOTAL	ACTUAL	2.33	2.23	0.48	0.82	0.69	0.37	0.4	0.18	0.22	0.34	0.58	0.12	0.73	7
	REQUIREMENT	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	
NICKEL TOTAL	ACTUAL	0.42	0.36	0.08	0.07	0.05	0.03	0.018	0.01	0.22	0.23	0.13	0.03	0.14	
	REQUIREMENT	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	
pH		8	8.9	8.6	10.1	8.77	8.6	10.9	9.49	8.05	8.1	8.49	8.2	8.85	2
SUSPENDED SOLIDS	ACTUAL	13.9	22.2	4.41	5.47	3.65	3.65	12	3.65	3.65	3.65	3.65	3.64	6.96	3
	REQUIREMENT	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	
ZINC TOTAL	ACTUAL	0.03	0.05	0.03	0.02	0.08	0.11	0.007	0.004	0.02	0.02	0.08	0.02	0.039	
	REQUIREMENT	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Esso Chemicals Canada Ltd. Sarnia

INDUSTRIAL ACTIVITY: Organic Chemicals, Synthetic Fibres

RECEIVING WATERBODY: DIRECT: St. Clair River

INDIRECT:

DESCRIPTION OF PROCESS: Polymerizes ethylene produced from natural gas and feed from petroleum refinery to produce polyethylene. Polymerizes vinyl chloride monomer to produce polyvinyl chloride. Fractionates feed from refinery to produce benzene, toluene and xylene.

EFFLUENT QUALITY: Contains insoluble and soluble hydrocarbons

EFFLUENT TREATMENT:

DISCHARGE TYPE: continuous through an extended outfall

COMMENTS:

June suspended solids exceedance due to pond clean out.
Company normally in compliance.

IMIS NUMBER: 0000070201 **SIC CODE:** 369 **MOE REGION:** Southwest **DISTRICT:** Sarnia

d0886

ESSO CHEMICALS CANADA LTD - 0000070201
SARNIA

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		21499	24869	25849	28579	31228	31320	30720	33390	33840	34270	33190	27390	29679	
pH		7.7	7.7	7.6	7.6	7.5	7.4	7.5	7.4	7.4	7.6	7.3	7.3	7.5	
SUSPENDED SOLIDS	ACTUAL	185	313	215	417	440	588	402	351	332	291	46	0	298	1
	REQUIREMENT	322	373	388	429	468	470	461	501	508	514	498	411	455	
PHENOLICS	ACTUAL	0.1	0.3	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.7	0.6	0.2	0.225	
	REQUIREMENT	0.43	0.5	0.52	0.572	0.625	0.626	0.614	0.668	0.677	0.7	0.664	0.548	0.594	
OIL AND GREASE	ACTUAL	19.3	12.4	23.3	25.7	53.1	21.9	39.9	27	0	6.85	49.8	43.8	26.9	
	REQUIREMENT	322	373	388	429	468	470	461	501	508	514	498	411	455	
AMMONIA NITROGEN	ACTUAL	6.4	0	24	0	0	0	0	6.7	0	3.4	13.2	30.1	6.98	
	REQUIREMENT	215	249	258	286	312	313	307	334	338	343	332	274	297	
TOTAL ORGANIC CARBON	ACTUAL	210	412	301	267	160	0	176	83	155	84	200	72	177	
	REQUIREMENT														
DISSOLVED SOLIDS	ACTUAL	433	1692	896	7019	1425	1360	2070	1728	581	560	1404	1905	1756	
	REQUIREMENT														

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Blackstone Industrial Prods. Ltd.
& PLANT LOCATION: Stratford

INDUSTRIAL SECTOR: Metal, Plastic Fabricating and Finishing

RECEIVING WATERBODY: DIRECT : Avon River

INDIRECT:

DESCRIPTION OF ACTIVITY:

EFFLUENT QUALITY: Contains dissolved metals including copper zinc and nickel

EFFLUENT TREATMENT:

DISCHARGE TYPE: Batch

COMMENTS:

In compliance.

IMIS NO.: 0001850007 SIC CODE: 325 MOE REGION: Southwest DISTRICT: London

d0886

BLACKSTONE INDUSTRIAL PRODUCTS LTD - 0001850007

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		836	791	773	727	723	714	614	732	770	732	769	873	751	
pH		8.6	7.96	8.2	7.7	7.73	7.79	7.8	7.7	7.9	7.9	7.4	7.8		
CHROMIUM	ACTUAL	0.0334	0.0475	0.0309	0.0218	0.0217	0.0214	0.0245	0.0512	0.085	0.0439	0.0923	0.0524	0.0432	
	REQUIREMENT	0.836	0.791	0.773	0.727	0.723	0.714	0.614	0.732	0.77	0.732	0.769	0.873	0.751	
COPPER TOTAL	ACTUAL	0.167	0.0949	0.0773	0.0582	0.0867	0.1071	0.0553	0.0732	0.1	0.0439	0.254	0.271	0.125	
	REQUIREMENT	0.836	0.791	0.773	0.727	0.723	0.714	0.614	0.732	0.77	0.732	0.769	0.873	0.751	
LEAD TOTAL	ACTUAL	0.092	0.245	0.155	0.138	0.159	0.114	0.104	0.139	0.177	0.234	0.138	0.0786	0.148	
	REQUIREMENT	0.418	0.396	0.773	0.364	0.362	0.357	0.307	0.366	0.77	0.366	0.385	0.437	0.378	
ZINC TOTAL	ACTUAL	0.167	0.135	0.101	0.145	0.246	0.129	0.197	0.132	0.169	0.264	0.477	-	0.2	
	REQUIREMENT	0.836	0.791	0.773	0.727	0.723	0.714	0.614	0.732	0.77	0.732	0.769		0.751	

WASTEWATER DISCHARGE SURVEY
1985

COMPANY NAME: Campbell Soup Co. Ltd.
& PLANT LOCATION: P.O. Box St. Marys

INDUSTRIAL ACTIVITY: Food and beverage

RECEIVING WATERBODY: DIRECT : 248 km from Thames R. North Branch

INDIRECT:

DESCRIPTION OF ACTIVITY: Poultry and small game dressing

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Diffused outfall to river sludge irrigation on company land

DISCHARGE TYPE: Continuous

COMMENTS:

Biological treatment upgraded 1974
BOD and Suspended Solids not in compliance.
Preliminary meetings have been held with Company officials regarding upgrading.
Sampling program conducted by M.O.E. staff Nov/Dec 1986. Further meeting with Company officials will be scheduled when results of sampling program are available.

IMIS NO.: 0000970004
SIC CODE: 101
MOE REGION: Southwest
DISTRICT: London

d0886

CAMPBELL SOUP CO. LTD - 0000970004

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		2280	2100	2360	2490	2770	2660	2880	2860	2700	2740	2640	2360	2570	
BIOCHEM. OXYGEN DEMAND	ACTUAL	25	42	29	82	37.9	96.8	_	71.5	60	76	27.1	33	48.4	5
	REQUIREMENT	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.4	
pH		7.6	7.6	7.7	8.1	7.56	7.3	_	7.3	8.1	8.2	_	7.6		
PHOSPHATES TOTAL	ACTUAL	0.7	0.84	0.8	1.13	1.2	1.3	_	1.6	1	1.2	1.2	1	1.09	
	REQUIREMENT	_	_	_	_	_	_	_	_	_	_	_	_	_	
SUSPENDED SOLIDS	ACTUAL	55	59	40	1000	45.2	71.3	_	91	65	66	43	39	131.2	7
	REQUIREMENT	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.4	
DISSOLVED SOLIDS	ACTUAL	1260	1230	1280	2560	1560	1630	_	1550	1650	1610	1400	1100	1530	
	REQUIREMENT	_	_	_	_	_	_	_	_	_	_	_	_	_	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Esso Petroleum Canada
Sarnia

INDUSTRIAL ACTIVITY: Petroleum Refining

RECEIVING WATERBODY: DIRECT: St. Clair River

INDIRECT:

DESCRIPTION OF ACTIVITY: Crude oil is converted into a wide range of petroleum products.

EFFLUENT QUALITY: Contains insolube and soluble compounds from crude oil at trace levels

EFFLUENT TREATMENT: Once through cooling water receives gravity separation prior to discharge to the St. Clair River. Process and essentially all storm water receives both primary and secondary (biological) treatment before discharge.

DISCHARGE TYPE: continuous through three outfalls

COMMENTS:

In compliance.

IMIS NUMBER: 0000070102 SIC CODE: 3651 3652 MOE REGION: Southwest DISTRICT: Sarnia

d0886

ESSO PETROLEUM CANADA - 0000070102
SARNIA

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		212000	200000	213000	212000	210000	209000	210000	210000	210000	211000	211000	207000	210000	
AMMONIA NITROGEN	ACTUAL	19.5	2.4	6	96	80.5	42.1	31.3	3.54	5.4	1.87	1.9	6	24.7	
	REQUIREMENT	2120	2000	2130	2120	2100	2090	2100	2100	2100	2110	2110	2070	2100	
PHENOLS	ACTUAL	0.4	3.4	0.7	0.7	0.4	0.9	0.5	0.4	0.3	0.2	0.14	0.3	0.7	
	REQUIREMENT	4.24	4.2	4.26	4.24	4.2	4.18	4.2	4.2	4.2	4.22	4.22	4.14	4.2	
DISSOLVED SOLIDS	ACTUAL	10400	5300	5800	9750	3820	6888	20240	14672	7380	8570	7000	7500	8943	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
SUSPENDED SOLIDS	ACTUAL	218	772	0*	253	1500	240	255	272	117	975	0	0	418	
	REQUIREMENT	3180	3150	3195	3180	3150	3135	3150	3150	3150	3165	3165	3105	3150	
OIL AND GREASE	ACTUAL	121	138	113	161	233	176	98	45	9	11	107	127	113	
	REQUIREMENT	2120	2000	2130	2120	2100	2090	2100	2100	2100	2110	2110	2070	2100	
SULPHIDE	ACTUAL	0	0	0	0	0	0	1.73	0	0	0	0	0	0.14	
	REQUIREMENT														
TOTAL CARBON	ACTUAL	0	0	0	0	0	146		0	954	53	126	24	118.4	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	

* INTAKE EXCEEDED DISCHARGE

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME Ethyl Canada Inc.
& PLANT LOCATION: Corunna

INDUSTRIAL ACTIVITY: Organic Chemicals, Synthetic Fibres

RECEIIING WATERBODY: DIRECT: St. Clair River

INDIRECT:

DESCRIPTION OF ACTIVITY: Tetraethyl lead is made from a lead-sodium alloy and ethyl chloride.

EFFLUENT QUALITY: Contains organic lead

EFFLUENT TREATMENT: Physical-chemical.

DISCHARGE TYPE: continuous through an extended outfall

COMMENTS:

October and December exceedances due to difficulties with treatment systems (pH control). Improvements in place during 1986. No exceedances to date in 1986.

IMIS NUMBER: 0000120006 SIC CODE: 374 MOE REGION: Southwest DISTRICT: Sarnia

d0886

ETHYL CANADA INC - 0000120006

ALL LOADS IN KG/DAY
ALL FLOW IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		18500	16500	17600	19400	28200	32300	37400	39400	39500	28800	22800	16700	26400	
LEAD	ACTUAL	17.8	9.4	7.74	13.4	20.9	32	28.5	30.3	26.3	44.6	15.3	26.6	22.7	2
	REQUIREMENT	18.5	16.5	17.6	19.4	28.2	32.3	37.4	39.4	39.6	28.8	22.8	16.7	26.4	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME Fiberglas Canada Inc.
& PLANT LOCATION: Sarnia

INDUSTRIAL ACTIVITY: Industrial Minerals

RECEIVING WATERBODY: DIRECT: Cole Drain

INDIRECT: St. Clair River

DESCRIPTION OF ACTIVITY: insulation is produced from silicate sands

EFFLUENT QUALITY: Contains trace processing agents such as phenols

EFFLUENT TREATMENT:

DISCHARGE TYPE: Continuous

COMMENTS:

Meets annual compliance. Two monthly exceedances of phenolics due to process water leaks.

IMIS NUMBER:

SIC CODE: 3562

MOE REGION: Southwest

DISTRICT: Sarnia

d0886

FIBERGLAS CANADA INC.
SARNIA

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		7450	6820	7630	7580	7720	8800	7800	6700	7680	7300	6320	6790	7370	
pH		8.2	8.7	8.6	8.6	8.7	8.2	8.5	8.4	8.5	8.2	8.2	8.4		
PHENOLICS	ACTUAL	0.1	0.25	0.1	0.32	0.05	0.02	0.03	0.02	0.02	0.07	0.05	0.04	0.09	2
	REQUIREMENT	0.15	0.14	0.15	0.15	0.15	0.18	0.16	0.13	0.15	0.15	0.12	0.14	0.15	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Ford Motor Co. of Canada Ltd. Windsor

INDUSTRIAL SECTOR: Metal, Plastic Fabricating and Finishing

RECEIVING WATERBODY: DIRECT: Detroit River

INDIRECT: Lake Erie

DESCRIPTION OF ACTIVITY: Engine block and parts are cast in the iron foundry; parts are machined and assembled into engines and transmissions.

EFFLUENT QUALITY: Contains iron, phenol and suspended solids.

EFFLUENT TREATMENT: Chemical coagulation, oil removal and sedimentation.

DISCHARGE TYPE: continuous six days a week through a submerged outfall

COMMENTS:

Phenols and Suspended Solids not in compliance.
Control order for phenol, suspended solids and iron is being prepared.
The final effluent was sampled 2 times during 1985 and tested by aerated 96-hr. rainbow trout bioassays.
The samples were found to have been non-lethal.

IMIS NUMBER: 0000020107 SIC CODE: 294 325 MOE REGION: Southwest DISTRICT: Windsor

d0886

FORD MOTOR CO. OF CANADA LTD. - 0000020107
WINDSOR

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		90800	90600	89000	90000	88900	91200	86800	89300	89300	86300	88900	87200	89000	
CHEM OX DEMAND	ACTUAL	1632	1227	1582	1870	1010	814	511	1260	887	949	950	879	1130	
	REQUIREMENT	-	-	-	-	• -	-	-	-	-	-	-	-	-	
IRON TOTAL	ACTUAL	309	288	276	273	249	238	225	214	196	207	213	198	224	
	REQUIREMENT	1540	1540	1513	1350	1511	1550	1476	1518	1518	1467	1511	1482	1518	
FLUORIDE	ACTUAL	386	380	374	372	368	379	329	324	326	336	364	357	358	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
pH		7.91	7.9	7.9	7.85	7.9	7.86	7.76	7.4	7.4	7.5	7.3	7.4		
PHENOLS	ACTUAL	44.1	46.8	44.5	29.9	26.8	30.9	12.1	13.3	10.7	28.1	26	27	28.3	12
	REQUIREMENT	1.82	1.81	1.78	1.8	1.8	1.82	1.74	1.79	1.79	1.73	1.78	1.74	1.54	
SUSPENDED SOLIDS	ACTUAL	4290	3022	2960	2920	2910	2810	3830	4710	5620	4380	2810	2400	3555	12
	REQUIREMENT	1362	1359	1335	1350	1334	1368	1302	1340	1340	1295	1334	1308	1336	
TOTAL SOLIDS	ACTUAL	15200	11900	11500	12000	11800	12000	9900	13600	13700	12500	8900	9800	11900	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
OIL AND GREASE	ACTUAL	0	0	0	0	0	0	0	0	0	0	0	0	0	
	REQUIREMENT	1362	1359	1335	1330	1334	1368	1302	1340	1340	1295	1334	1308	1336	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Ford Motor Company Ltd.
Assembly Plant
St. Thomas

INDUSTRIAL SECTOR: Metal, Plastic Fabricating and Finishing

RECEIVING WATERBODY: DIRECT: Dodd Creek to Kettle Creek

INDIRECT: 38 Km to Lake Erie

DESCRIPTION OF ACTIVITY: Auto painting and assembly.

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Domestic - Aerated activated sludge plant.
Industrial - Chemical batch followed by biological treatment and rapid sand filtration.

DISCHARGE TYPE: Intermittent through an on-shore outfall; weekend flow and pollutants drop off.

COMMENTS:

Suspended Solids not in compliance for February and April.
Plant is installing an effluent flow measurement device.
Will be collecting composite samples at point for IMIS data in 1987.
Effluent considered quite acceptable and generally meeting MOE requirements.

IMIS NUMBER: 0000020404 SIC CODE: 323 MOE REGION: Southwest DISTRICT: London

d0886

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FORD MOTOR CO. OF CANADA LTD. - 0000020404
ST. THOMAS

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		4930	5640	5330	5440	4460	6760	4320	6730	6650	6560	5900	4660	5680	
BIOCHEM. OXYGEN DEMAND	ACTUAL	21.7	36.6	37.3	40.8	20	20.1	9.93	27.6	17.3	26.2	31.9	26.6	26.9	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
CHEMICAL OXYGEN DEMAND	ACTUAL	207	332	309	195	141	209	130	191	178	180	165	176	206	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
CHROMIUM TOTAL	ACTUAL	0.235	0.282	0.266	0.26	0.178	0.338	0.216	0.336	0.266	0.262	0.295	0.233	0.264	
	REQUIREMENT		-	-	-	-	-	-	-	-	-	-	-	5.66	
SUSPENDED SOLIDS	ACTUAL	21.6	111	40	87.6	49.5	60.8	25	50.4	23.9	44	62	35	51.8	2
	REQUIREMENT	-	84.6	80	81.6	66.9	101	64.8	100.95	99.8	98.4	88.5	69.9	85.2	
pH		7.3	7.5	7.5	7.5	8	7.8	8.1	7.7	7.9	8.2	7.4	7.5		
TOTAL SOLIDS	ACTUAL	1650	1850	1570	1860	1500	2008	1470	2090	2040	2000	1700	1690	1820	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
OIL AND GREASE	ACTUAL	5.88	7.11	4.8	1.41	4.01	6.55	4.74	12.8	5.99	3.28	8.86	6.53	6.05	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
ZINC TOTAL	ACTUAL	0.279	0.395	0.373	0.342	0.222	0.338	0.177	0.268	0.266	0.46	0.413	0.326	0.33	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
PHENOLICS	ACTUAL	0.0137	0.0212	0.026	0.09	0.062	0.076	0.043	0.067	0.093	0.066	0.094	0.049	0.014	
	REQUIREMENT	-	0.109	0.107	0.109	-	-	-	-	0.133	-	0.118	0.093	0.114	
PHOSPHATES	ACTUAL	8.67	11.6	4.27	7.19	8.47	17.2	3.45	4.7	10.64	6.04	7.26	4.94	8.14	
	REQUIREMENT	-													

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: General Chemical Canada Ltd
(formerly: Allied Chemical Canada Inc.)
Amherstburg.

INDUSTRIAL SECTOR: Inorganic Chemicals

RECEIVING WATERBODY: DIRECT: Detroit River

INDIRECT: Lake Erie

DESCRIPTION OF ACTIVITY: Soda ash (sodium carbonate) is made from table salt (sodium chloride).

EFFLUENT QUALITY: Contains inorganic salts (chlorides, carbonates).

EFFLUENT TREATMENT: By-product recovery and sedimentation.

DISCHARGE TYPE: continuous

COMMENTS:

pH not in compliance.
Company met all 12 monthly requirements for chlorides, ammonia nitrogen and suspended solids.
Significance of high pH in the receiving water is to be assessed by M.O.E. staff.
The final effluent was sampled 4 times during 1985 and tested by aerated 96-hr. rainbow trout bioassay.
Two of the samples had LC50's of 7 and 8.7%. The remaining two samples were found to have been non-lethal (>100%).

IMIS NUMBER: 0000010009 SIC CODE: 378 3782 MOE REGION: Southwest DISTRICT: Windsor

d0886

GENERAL CHEMICAL CANADA LTD. - 0000010009
AMHERSTBURG PLANT

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		106000	111000	125000	142000	155000	159000	161000	170000	169000	148000	134000	139000	143000	
CHLORIDES	ACTUAL	837000	829000	1170000	941000	667000	925000	613000	696000	895000	829000	526000	697000	801000	
	REQUIREMENT	1360000	1360000	1360000	1360000	1360000	1360000	1360000	1360000	1360000	1360000	1360000	1360000	1360000	
FLUORIDE TOTAL	ACTUAL	67.7	74.3	138	95.7	55	61.6	42.2	49.5	78	66.1	48.7	40.5	68.1	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
AMMONIA NITROGEN	ACTUAL	264	367	640	254	135	202	135	108	189	192	167	15.3	222	
	REQUIRED	1060	1110	1250	1420	1550	1590	1610	1700	1690	1480	1340	1390	1430	
pH		11.8	11.8	11.7	11.8	11.7	11.8	11.6	11.5	11.4	11.7	10.9	11.7		12
SUSPENDED SOLIDS	ACTUAL	0	0	0	0	0	0	0	0	0	0	0	0	0	
	REQUIRED	1590	1670	1830	2130	2330	2380	2410	2550	2530	2220	2010	2010	2190	
TOTAL SOLIDS	ACTUAL	1380000	1430000	2000000	1570000	1090000	1520000	1090000	1160000	1530000	1460000	904000	1160000	1230000	
	REQUIRED	-	-	-	-	-	-	-	-	-	-	-	-	-	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME H. J. Heinz Company of Canada Ltd. INDUSTRIAL SECTOR: Food and Beverage
& PLANT LOCATION: Leamington

RECEIVING WATERBODY: DIRECT: Selkirk Drain

INDIRECT: 1.3 km Lake Erie

DESCRIPTION OF ACTIVITY: A wide variety of food products are made from produce grown locally.

EFFLUENT QUALITY: Contains vegetable processing waste (BOD and suspended solids).

EFFLUENT TREATMENT: Biological treatment system (activated sludge plus trickling filter).

DISCHARGE TYPE: continuous through an open outfall

COMMENTS:

BOD and TSS not in compliance.
Monthly phosphorous requirements were met all 12 times; BOD requirements were met 9 times; TSS requirements were met 8 out of 12 times.
Increased aeration capability has been provided.

IMIS NUMBER: 0001020007 SIC CODE: 103 1031 MOE REGION: Southwest DISTRICT: Windsor

d0886

H.J HEINZ CO. OF CANADA LTD. - 0001020007

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		7930	8450	10200	10800	14400	13200	17900	41800	57900	20400	12800	7500	18600	
BIOCHEM. OXYGEN DEMAND	ACTUAL	54	39	156	72	115	301	298	204	693	173	78	20	184	3
	REQUIREMENT	120	127	153	162	216	198	268	627	869	306	192	113	279	
CHEM. OXYGEN DEMAND	ACTUAL	467	569	604	460	596	668	453	2150	5970	675	548	2960	1340	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
pH		7.37	7.23	7.19	7.32	7.23	7.31	7.35	7.47	7.22	7.37	7.56	7.4		
PHOSPHORUS TOTAL	ACTUAL	2.9	6.3	3.07	4.38	6.29	11.5	10.55	29.1	31.6	12.4	4.69	2.77	10.5	
	REQUIREMENT	7.93	8.45	10.2	10.8	14.4	13.2	17.9	41.8	57.9	20.4	12.8	7.5	18.6	
SUSPENDED SOLIDS	ACTUAL	261	102	137	223	184	180	122	2210	2120	70	103	69	482	4
	REQUIREMENT	119	127	153	162	216	198	269	627	869	306	192	113	279	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: INCO Metals Ltd. Port Colborne

INDUSTRIAL SECTOR: Metal Mining, Smelting and Refining

RECEIVING WATERBODY: DIRECT: Lake Erie

INDIRECT:

DESCRIPTION OF ACTIVITY: Electrolytic processes are used to recover pure metals like nickel, copper silver, gold, etc.

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Filtration plant.

DISCHARGE TYPE: open outfall

COMMENTS:

Company is in compliance with annual averages, but not with all monthly requirements.

IMIS NUMBER: 0001600105 SIC CODE: 295 MOE REGION: West Central DISTRICT: Welland

d0886

INCO METALS CO. - 0001600105

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		13800	16000	18500	14500	11400	14100	9500	12200	15300	15200	19700	13400	14500	
NICKEL TOTAL	ACTUAL	10	22	26	12	7	4	2	2	3	3	9.85	2.68	10	2
	REQUIREMENT	13.8	16	18.5	14.5	11.4	14.1	9.5	12.2	15.3	15.2	19.7	13.4	14.5	
SUSPENDED SOLIDS	ACTUAL	207	272	259	232	171	99	19	12	6	15	78.8	53.6	119	2
	REQUIREMENT	207	240	278	218	171	212	143	183	230	228	296	201	218	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: International Minerals and Chemicals
Dunnville

INDUSTRIAL SECTOR: Industrial Minerals

RECEIVING WATERBODY: DIRECT: Grand River

INDIRECT: 3 km to Lake Erie

DESCRIPTION OF ACTIVITY: Phosphate ore, sulphuric acid and phosphoric acid are used to make fertilizer.

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Lime precipitation.

DISCHARGE TYPE: continuous at shoreline

COMMENTS:

Phosphorus not in compliance.
Since plant shut down, phosphorus loadings have continued to decline.
1986 levels show a continuing improvement over 1985.

IMIS NUMBER: 0001500008 SIC CODE: 372 MOE REGION: West Central DISTRICT: Haldimand Norfolk/Brant

d0886

INTERNATIONAL MINERALS AND CHEMICAL CORP. - 0001500008

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		1130	1300	2329	2620	2450	2400	2280	2260	2120	2070	2230	1960	2096	
pH		8.2	8.2	8.4	9.3	9.4	9.2	9.2	9.2	9.4	9.3	9.3	9.3		
PHOSPHORUS	ACTUAL	14.2	14.7	12	10.7	7	7	7.3	10.6	9.3	9.9	13.5	13.5	10.81	12
TOTAL	REQUIREMENT	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: J. M. Schneider Inc. Ayr

INDUSTRIAL SECTOR: Food and Beverage

RECEIVING WATERBODY: DIRECT: Nith River to Grand River

INDIRECT: 196 km to Lake Erie

DESCRIPTION OF ACTIVITY: Beef and pork is packaged and poultry is deep fried and packaged for retail sales.

EFFLUENT QUALITY: Contains dissolved organics and phosphorous.

EFFLUENT TREATMENT: Flow equalization, dissolved air flotation, aeration and sedimentation.

DISCHARGE TYPE: seven day continuous flow through a submerged outfall

COMMENTS:

Not in compliance.
No discharge in June due to plant strike. Company failed to sample in September and no oil and grease values are available for July and August.
Discharge quality failed to meet limits in 1985. In upgrading its existing wastewater treatment plant the company failed to improve quality by adding a Dissolved Air Flotation Unit alone in March '85. Further addition of flocculants in December '85 and flow equalization in February '86 has improved discharge quality to where it has complied with limits (since June '86).
Flowmeter installed in April '86 indicates that actual discharge volume is approximately one fourth of the reported flows, i.e. actual loads were one fourth of those listed herein. Accurate flows have been reported since June 1986. Monthly requirements are based on Certificate of Approval and do not vary monthly.

IMIS NUMBER: 0001440007 SIC CODE: 1011 1012 MOE REGION: West Central DISTRICT: Cambridge

d0886

J. M. SCHNEIDER INC. - 0001440007

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY
(FLOW LIMIT 363)

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		228	299	358	301	524	0	463	483	496	577	517	346	417	6
BIOCHEM. OXYGEN DEMAND	ACTUAL	163	46.6	697	56.3	213	0	102	57.9	–	49.3	10.9	2.11	140	9
	REQUIREMENT	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4		5.4	5.4	5.4	5.4	
AMMONIA NITROGEN	ACTUAL	5.92	13.7	2.5	21	20.7	–	0.56	1.8	–	20.2	28.2	5.71	12	7
	REQUIREMENT	3.6	3.6	3.6	3.6	3.6		3.6	3.6		3.6	3.6	3.6	3.6	
pH		7.28	7.22	6.8	7.4	7.21	–	7.47	7.36	–	7.2	7.5	7.3	7.27	
PHOSPHORUS TOTAL	ACTUAL	0.68	1.7	0.3	0.2	1.52	0	5.37	8.5	–	4.59	1.06	2.91	2.683	4
	REQUIREMENT	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2		2.2	2.2	2.2	2.2	
SUSPENDED SOLIDS	ACTUAL	255	38	893	60	255	0	291	51.2	–	59.4	11.4	4.43	192	9
	REQUIREMENT	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4		5.4	5.4	5.4	5.4	
OIL AND GREASE	ACTUAL	51.7	17.3	116	14.1	37.8	–	–	–	–	37.6	13.7	2.35	36.3	7
	REQUIREMENT	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4		5.4	5.4	5.4	5.4	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Omstead Food Ltd. Wheatley

INDUSTRIAL SECTOR: Food and Beverage

RECEIVING WATERBODY: DIRECT: Muddy Creek

INDIRECT: 1.0 km Lake Erie

DESCRIPTION OF ACTIVITY: Fish is processed and vegetables grown locally are processed/frozen.

EFFLUENT QUALITY: Contains fish and vegetable processing waste (BOD. suspended solids).

EFFLUENT TREATMENT: Extended aeration system.

DISCHARGE TYPE: continuous, when plant is operating, through an open outfall

COMMENTS:

BOD, Phosphorus and Suspended Solids not in compliance.
Upsets during cold weather may occur.
Operating improvements such as nutrient addition have been implemented.

IMIS NUMBER: 0001050004 SIC CODE: 102 103 1032 MOE REGION: Southwest DISTRICT: Windsor

d0886

OMSTEAD FOODS LTD - 0001050004

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		846	928	1640	2710	2640	1970	4600	5080	6350	7510	6530	4090	3810	
BIOCHEM OX. DEMAND	ACTUAL	8.18	24.8	44	11.7	15.2	21.9	42.6	59	51.5	61.1	43.8	86.3	39.2	3
	REQUIRED	12.7	13.9	24.6	40.7	39.6	29.6	69	88.2	95.2	113	98	61.4	57.2	
AMMONIA NITROGEN	ACTUAL	1.7	4	1.6	14.6	17.6	2.6	17.6	8.2	1.4	7.7	2	0.8	6.9	
	REQUIRED	8.5	9.3	16.4	27.1	26.4	19.7	46	58.8	63.5	75.1	65.3	40.9	38.1	
PHOSPHORUS TOTAL	ACTUAL	0.11	-	0.38	3.12	1.5	0.86	4	7.6	6.5	5.9	2.7	2.2	3.17	2
	REQUIRED	4.5		4.5	4.5	4.5	4.5	4.6	5.88	6.35	7.51	6.53	4.5	5.6	
SUSPENDED SOLIDS	ACTUAL	43.3	26.4	24	38.3	42.4	30.9	64.3	56.7	48.7	102	94	207	64.9	5
	REQUIRED	12.7	13.9	24.6	40.7	39.6	29.6	69	88.2	95.3	113	98	61.4	57.2	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME
& PLANT LOCATION: Ontario Hydro
Lambton TGS
Courtright

INDUSTRIAL ACTIVITY: Electric Power Generation

RECEIVING WATERBODY: DIRECT: St. Clair River

INDIRECT:

DESCRIPTION OF ACTIVITY: Coal is burned

EFFLUENT QUALITY: Hot water

EFFLUENT TREATMENT:

DISCHARGE TYPE: Continuous (once through condenser cooling water).

COMMENTS:

The maximum temperature exceedances were a result of high inlet temperatures during July, August and September.

IMIS NUMBER:

SIC CODE: 572

MOE REGION: Southwest

DISTRICT: Sarnia

d0886

ONTARIO HYDRO
LAMBTON TGS

ALL LOADS IN KG/DAY
ALL FLOWS IN MILLION CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	% OF OPERATING HOURS EXCEEDED
FLOW		95.8	91	97.6	73.9	87.6	83.1	70.9	70.4	70.4	71.1	74.1	97.6	84.5	
TEMPERATUTRE RISE (MAX.)	ACTUAL	18.3	14.9	14.1	15.3	12.9	14.2	14.1	14.3	13.9	13.7	14	15	14.53	
	GUIDELINE	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	
MAX. EFFLUENT TEMPERATURE	ACTUAL	18.6	15.3	16.5	20.9	24.3	30.4	33.9	39.5	34.3	28.5	23.7	17.8	25.31	.023
	GUIDELINE	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	
SUSPENDED SOLIDS	ACTUAL	95800	0*	0*	0*	0*	49900	0*	0	113000	0	74100	0*		
	REQUIREMENT	1437000	1365000	1464000	1109000	1314000	1250000	1064000	1056000	1056000	1067000	1110000	1460000		

0* Intake exceeded discharge.

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Ontario Hydro (TGS)
Nanticoke

INDUSTRIAL SECTOR: Electric Power Generation

RECEIVING WATERBODY: DIRECT: Lake Erie

INDIRECT:

PROCESS TYPE: Coal fired thermal generating station.

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Primary and secondary ash settling cells, primary and secondary settling lagoons.

DISCHARGE TYPE: Continuous

COMMENTS:

August Suspended Solids not in compliance.
Data applies to effluent from ash lagoon only. Wastewater from lagoon is mixed with condensed cooling water prior to discharge.
Effluent flow applies only to ash lagoon, not total discharge of cooling water plus ash lagoon effluent.

IMIS NUMBER: 0001840008 SIC CODE: 572
MOE REGION: West Central
DISTRICT: Haldimand-Norfolk/Brant

d0886

ONTARIO HYDRO - 0001840008
NANTICOKE TGS (Ash Lagoon)

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		65400	60100	54800	30000	47200	48100	25800	33100	38000	33400	42200	60100	44800	
CHROMIUM TOTAL	ACTUAL	0.98	1.2	–	0	–	0	0	–	0	0	0	0	0.242	
	REQUIREMENT	65.4	60.1		30		48.1	25.8		38	33.4	42.2	60.1	44.8	
IRON TOTAL	ACTUAL	0	0	–	0	–	0	0	–	0	0	0	0	0	
	REQUIREMENT	65.4	60.1		30		48.1	25.8		38	33.4	42.2	60.1	44.8	
PHOSPHORUS TOTAL	ACTUAL	0	–	0.55	–	0	0.02	0	0	–	0.13	0.21	0	0.101	
	REQUIREMENT	65.4		54.8		47.2	48.1	25.8	33.1		33.4	42.2	60.1	44.8	
DISSOLVED SOLIDS	ACTUAL	21400	26500	25200	9084	12700	15400	8910	9460	10870	10380	13100	31200	16200	
	REQUIREMENT	–	–	–	–	–	–	–	–	–	–	–	–	–	
SUSPENDED SOLIDS	ACTUAL	327	541	685	129	0	245	297	1130	456	92	0	0	325	1
	REQUIREMENT	981	901	822	450	708	721	387	496	570	501	633	901	672	
SULPHATES	ACTUAL	12200	11700	11000	6150	5910	9790	5300	5560	7000	6410	9260	12300	8540	
	REQUIREMENT	–	–	–	–	–	–	–	–	–	–	–	–	–	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Ontario Hydro
Nanticoke TGS
Nanticoke

INDUSTRIAL SECTOR: Electric Power Generation

RECEIVING WATERBODY: DIRECT: Lake Erie

INDIRECT:

DESCRIPTION OF ACTIVITY: Coal fired thermal generating station.

EFFLUENT QUALITY:

EFFLUENT TREATMENT:

DISCHARGE TYPE: Continuous (once through condenser cooling water).

COMMENTS:

* Nanticoke TGS Tempering Exemption in effect July 1, 1983, for a five year period.

IMIS NUMBER: 0001840008 SIC CODE: 572 MOE REGION: West Central DISTRICT: Haldimand-Norfolk/Brant

d0886

ONTARIO HYDRO
NANTICOKE TGS (Cooling Water)

TEMPERATURES IN DEGREES CELSIUS
ALL FLOWS IN MILLION CUBIC METRES/MONTH

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	% OF OPERATING HOURS EXCEEDED
FLOW		265.3	281.9	335.8	209.6	518.8	238.5	192.6	205.9	246.8	193.5	231.9	327.3	270.6	
TEMPERATUTRE RISE	ACTUAL	12.2	12.1	10.7	11.5	12.2	12.5	11	9.4	11.9	9.5	9.8	10.5	11.11	0
(MAX.)	GUIDELINE	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
MAX. EFFLUENT	ACTUAL	16.5	13.6	13.5	14.1	23.7	23.7	28.1	30.6	31	26.1	20.8	14.1	19.65	–
TEMPERATURE	GUIDELINE	35	35	35	35	35	35	35	35	35	35	35	35	35	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Petrosar Ltd.
Corunna

INDUSTRIAL ACTIVITY: Petroleum Refining

RECEIVING WATERBODY: DIRECT: St. Clair River

INDIRECT:

DESCRIPTION OF ACTIVITY: Primary function to provide feedstock for Dupont, Polymer and Union Carbide.

EFFLUENT QUALITY: Contains insoluble and soluble compounds from crude oil at trace levels

EFFLUENT TREATMENT: Tertiary treatment diffused outfall.

DISCHARGE TYPE: continuous through a submerged diffuser

COMMENTS:

Phenols not in compliance, January to March.
Improved sources separation and optimization of treatment system have corrected exceedance of phenols.
High recycled re-useage of water. Low flow discharge.

IMIS NUMBER: 0000480004 SIC CODE: 3651 MOE REGION: Southwest DISTRICT: Sarnia

d0886

PETROSAR LTD - 0000480004

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		7410	6550	7230	6180	6090	6770	6180	7140	7270	6360	6180	5590	6590	
AMMONIA NITROGEN	ACTUAL	13	18	19	29	20	10	8	_	8	9	12	13	14.5	
	REQUIREMENT	74.1	65.5	72.3	61.8	60.9	67.7	61.8	71.4	72.7	63.6	61.8	55.9	65.9	
PHENOLS	ACTUAL	0.29	0.17	0.26	0.07	0.03	0.07	0.03	_	0.06	0.05	0.06	0.06	0.105	3
	REQUIREMENT	0.148	0.133	0.145	0.123	0.121	0.134	0.121	0.142	0.144	0.126	0.123	0.111	0.131	
SUSPENDED SOLIDS	ACTUAL	62	53	64	54	50	25	58	_	13	35	38	29	43.7	
	REQUIREMENT	111	98.3	109	92.7	102	161	92.7		110	95.4	92.7	83.9	98.9	
OIL AND GREASE	ACTUAL	18	15	31	12	11	6	5	_	7	7	3	7	11.1	
	REQUIREMENT	74.1	65.5	72.3	61.8	60.9	67.7	61.8	71.4	72.7	63.6	61.8	55.9	65.9	
TOTAL CARBON	ACTUAL	82	67	122	70	67	61	60	_	53	170	46	73	79.2	
	REQUIREMENT	_	_	_	_	_	_	_	_	_	_	_	_	_	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME Polysar Ltd.
& PLANT LOCATION: Sarnia

INDUSTRIAL ACTIVITY: Organic Chemicals, Synthetic Fibres

RECEIVING WATERBODY: DIRECT: St. Clair River

INDIRECT:

DESCRIPTION OF ACTIVITY: Feedstock from refineries in the Sarnia area are converted into several grades of synthetic rubber

EFFLUENT QUALITY: Contains a variety of organics including chlorinated compounds

EFFLUENT TREATMENT:

DISCHARGE TYPE: continuous through five outfalls

COMMENTS:

In compliance.

IMIS NUMBER: 0000030007 SIC CODE: 162 373 MOE REGION: Southwest DISTRICT: Sarnia

d0886

POLYSAR LTD. - 0000030007

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		230000	261000	257000	250000	241000	269000	261000	256000	256000	240000	246000	254000	252000	
AMMONIA NITROGEN	ACTUAL	264	197	192	356	290	230	350	95.4	125	64	157	142	205	
	REQUIREMENT	2300	2610	2570	2500	2410	2690	2610	2560	2560	2400	2460	2540	2520	
PHENOLS	ACTUAL	0.68	1.14	1.3	1.23	1.14	1.31	0.58	0.9	0.522	0.91	0.372	0.366	0.87	
	REQUIREMENT	4.6	5.22	5.14	5	4.82	5.38	5.22	5.12	5.12	4.8	4.92	5.08	5.04	
pH		8.4	8.3	8.1	8.1	7.9	8.2	8.2	8.2	8.2	8.1	8.1	8.2		
SUSPENDED SOLIDS	ACTUAL	765	1350	559	2300	1610	1780	141	674	938	2850	3060	1800	1486	
	REQUIREMENT	3450	3915	3855	3750	3615	4035	3915	3840	3840	3600	3690	3810	3780	
OIL AND GREASE	ACTUAL	30	27	53	134	86	75	10	20	19	35	55	77	51.8	
	REQUIREMENT	3450	3915	3855	3750	3615	4035	3915	3840	3840	3600	3690	3810	3780	
TOTAL CARBON	ACTUAL	1400	1283*	1510	1770	1290	1020	612	543	650	1460	906	1960	1200	
	REQUIREMENT	–	–	–	–	–	–	–	–	–	–	–	–	–	

d1186

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Shell Canada Ltd.
Corunna

INDUSTRIAL ACTIVITY: Petroleum Refining

RECEIVING WATERBODY: DIRECT: Talford Creek

INDIRECT: St. Clair River

DESCRIPTION OF ACTIVITY: Crude oil is converted into a wide range of petroleum products

EFFLUENT QUALITY: Contains insoluble and dissolved compounds from crude oil at trace levels

EFFLUENT TREATMENT:

DISCHARGE TYPE: continuous through two outfalls

COMMENTS:

In compliance.

IMIS NUMBER: 0000510107 SIC CODE: 3651 373 MOE REGION: Southwest DISTRICT: Sarnia

d0986

SHELL CANADA LTD - 0000510107
CORUNNA

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		_	212000	206000	214400	227000	230000	257000	289000	299000	279000	262000	238000	226000	
AMMONIA NITROGEN	ACTUAL	18.8	6.89	0	0	0	0	38.1	0	10	0	0	3.6	6.5	
	REQUIREMENT	_	2120	2060	2144	2270	2300	2570	2890	2990	2750	2620	2380	2260	
pH		7.8	7.7	7.75	7.9	7.8	7.75	7.85	8.05	7.4	7.65	7.75	7.45		
PHENOLS	ACTUAL	0.54	0.6	0.47	0.38	0.26	0.1	0.07	0.63	0.3	0.09	0.64	0.12	0.35	
	REQUIREMENT	_	4.24	4.12	4.29	4.54	4.6	5.14	5.78	5.98	5.58	5.24	4.76	4.52	
SUSPENDED SOLIDS	ACTUAL	_	2870	0	139	121	537	1022	0	2190	544	0	1780	767	
	REQUIREMENT		3180	3090	3216	3405	3450	3855	4335	4490	4185	3930	3570	3700	
DISSOLVED SOLIDS	ACTUAL	-	7640	3770	6820	3270	3270	5720	6940	6850	4910	3620	1410	4930	
	REQUIREMENT		_	_	_	_	_	_	_	_	_	_	_	_	
OIL AND GREASE	ACTUAL	0	86	23	142	116	21	234	330	243	36	78	93	117	
	REQUIREMENT	_	2120	2060	2140	2270	2300	2570	2890	2990	2790	2620	2380	2260	
SULPHIDES	ACTUAL	0	0	0	0	0	0	0	0	0	0	4.7	0	0.392	
	REQUIREMENT	_	_	_	_	_	_	_	_	_	_	_	_	_	
TOTAL CARBON		1820	994	0	370	_	_	1150	52.2	_	1360	0	305	671	
		_	_	_	_	_	_	_	_	_	_	_	_	_	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Stanley Hardware Div. of Stanley Canada Inc., New Hamburg

INDUSTRIAL SECTOR: Metal, Plastic Fabricating and Finishing

RECEIVING WATERBODY: DIRECT: Nith River to Grand River

INDIRECT: 203 km to Lake Erie

DESCRIPTION OF ACTIVITY: Makes tools, plates hardware, etc.

EFFLUENT QUALITY: Contains heavy metals.

EFFLUENT TREATMENT: Chrome reduction, cyanide destruction, neutralization and sedimentation.

DISCHARGE TYPE: five day continuous flow 7 am to 12:00 pm to a storm sewer

COMMENTS:

Not in compliance.
No suspended solids values are available for April, July, October and November.
The 1985 Ministry limits for cyanide, nickel and zinc are more stringent than the '84 limits.
Discharge quality consistently met limits for pH, chromium and copper, exceeded cyanide and nickel occasionally (yearly average still meeting limits) and exceeded suspended solids most of the year. Zinc exceedances became worse during the last half of the year.
The company increased production by 50% in October '85 and again during spring of 1986.
The company has committed itself to zinc and nickel rinse optimization through close looping and reactive concurrent flow rinses, filtration and evaporator system to reduce its wastewater treatment facility loading to meet compliance by March 1987.

IMIS NUMBER: 0001480003 SIC CODE: 301 MOE REGION: West Central DISTRICT: Cambridge

d0886

STANLEY HARDWARE - 0001480003
DIVISION OF STANLEY CANADA INC

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY
(FLOW LIMIT 304)

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		209	232	240	240	248	268	270	270	285	290	290	290	261	
CYANIDE	ACTUAL	0.008	0.022	0.047	0.011	0.027	0.035	0.008	0.054	0.0103	0.009	0.011	0.01	0.021	3
	REQUIREMENT	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	
CHROMIUM TOTAL	ACTUAL	0.01	0.019	0.021	0.026	0.025	0.046	0.127	0.055	0.063	0.119	0.103	0.067	0.056	
	REQUIREMENT	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
COPPER TOTAL	ACTUAL	0.01	0.083	0.034	0.064	0.074	0.032	0.034	0.021	0.12	0.096	0.151	0.215	0.078	
	REQUIREMENT	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
NICKEL TOTAL	ACTUAL	0.098	0.181	0.114	0.086	0.092	0.126	0.27	0.084	0.171	0.119	0.154	0.3	0.15	2
	REQUIREMENT	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	
pH		8.5	8.4	8.7	8.5	8.6	8.5	8.8	8.7	8.5	8.8	8.5	8.5	8.58	
SUSPENDED	ACTUAL	2.12	7.65	8.52	_	4.94	7.56	_	11.1	2.9	_	_	7.25	6.5	6
SOLIDS	REQUIREMENT	4.43	4.43	4.43		4.43	4.43		4.43	4.43			4.43	4.43	
ZINC TOTAL	ACTUAL	0.104	0.01	0.122	0.128	0.141	0.142	0.175	0.147	0.188	0.183	0.209	0.319	0.156	5
	REQUIREMENT	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Stelco Inc. Lake Erie Works Nanticoke

INDUSTRIAL SECTOR: Iron and Steel

RECEIVING WATERBODY: DIRECT: Centre Creek

INDIRECT: 0.15 km to Lake Erie

DESCRIPTION OF ACTIVITY: Coke ovens with a by-product plant, blast furnace, basic oxygen furnace and a hot strip mill are used to make steel.

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Final wastewater treatment consisting of equalization, classification, alkaline, breakpoint, chlorination, filtration and final holding pond.

DISCHARGE TYPE: continuous through an open outfall

COMMENTS:

Lead and Iron not in compliance for November. Process cooling water not in compliance for Suspended Solids.
Sewage stabilization pond not in compliance for Suspended Solids.
Treatment and recirculation at source is maximized.
Exceedances in process effluent caused by surface drainage entering into final holding pond.
Requirement for process effluent set by Certificate of Approval.
In the sewage stabilization pond suspended solids exceedances caused by excessive algae growth.
The final effluent was sampled once during 1985 and tested by an aerated 96-hr. rainbow trout bioassay.
The sample was found to have been non-lethal.

IMIS NUMBER: 0000950105 SIC CODE: 291 MOE REGION: West Central DISTRICT: Haldimand-Norfold/Brant

STELCO INC - 0000950105
LAKE ERIE WORKS (process)

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		27700	37200	34100	31200	27500	35500	34400	42200	39000	45500	60600	38500	37800	
CYANIDE AVAILABLE	ACTUAL	1.1	1.1	2.4	0.9	<.5	0.7	0.7	1.3	1.2	1.8	4.2	5.8	0.193	
	REQUIREMENT	_	_	_	_	_	_	_	_	_	_	_	_	_	
CYANIDE FREE	ACTUAL	1.4	1.9	1.7	1.6	<1.4	<1.8	1.4	<2.1	1.6	2.3	3	1.9	1.87	
	REQUIREMENT	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	
CADMIUM TOTAL	ACTUAL	_	_	0.17	0.16	_	_	0.17	_	0.19	0.23	0.3	0.23	0.207	
	REQUIREMENT	_	_	_	_	_	_	_	_	_	_	_	_	_	
CHLORINE FREE	ACTUAL	<2.8	3.7	3.4	3.1	<2.7	<3.6	3.8	4.2	3.9	4.6	6.1	3.9	4.078	
	REQUIREMENT	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	
CHROMIUM TOTAL	ACTUAL	0.8	0.7	0.5	0.6	0.5	0.7	0.3	0.8	0.8	0.5	2.4	1.5	0.842	
	REQUIREMENT	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	
COPPER TOTAL	ACTUAL	0.55	0.74	0.51	0.31	0.5	0.71	0.34	0.42	0.8	0.9	1.31	0.77	0.647	
	REQUIREMENT	2.87	2.87	2.87	2.87	2.87	2.87	2.87	2.87	2.87	2.87	2.87	2.87	2.87	
IRON TOTAL	ACTUAL	17.7	32.7	22.2	16.2	9.9	13.8	7.2	22.3	10.1	24.6	63	35.1	22.9	1
	REQUIREMENT	39.2	39.2	39.2	39.2	39.2	39.2	39.2	39.2	39.2	39.2	39.2	39.2	39.2	
AMMONIA NITROGEN	ACTUAL	3.3	5.2	4.8	3.7	2.7	2.8	2.4	4.6	4.7	10	7.9	5.8	4.83	
	REQUIREMENT	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	
LEAD TOTAL	ACTUAL	2.8	3.3	3.4	1.2	1.6	1.4	1.7	3	2.7	4.6	12.1	9.6	3.95	1
	REQUIREMENT	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	

STELCO INC - 0000950105
LAKE ERIE WORKS (process)

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
PHENOLS	ACTUAL	0.03	0.04	0.03	0.03	0.03	0.04	0.03	0.04	0.04	0.05	0.06	0.05	0.0392	
	REQUIREMENT	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	
PHOSPHORUS TOTAL	ACTUAL	2.8	3.7	3.4	3.1	_	_	3.4	4.2	3.9	5.5	6.7	3.9		
	REQUIREMENT	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	
SUSPENDED SOLIDS	ACTUAL	244	357	283	234	242	210	182	565	417	601	1240	533	455	5
	REQUIREMENT	392	392	392	392	392	392	392	392	392	392	392	392	392	
OIL AND GREASE	ACTUAL	48.5	55.7	75	31.2	<27.5	35.5	34.4	63.2	62.3	81.9	60.6	77.1	52.1	
	REQUIREMENT	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6	
ZINC TOTAL	ACTUAL	3	6.7	6.1	4.1	2.5	2.8	1	6.3	0.8	1.8	1.8	2.7	3.3	
	REQUIREMENT	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	

STELCO INC - 0000950105
LAKE ERIE WORKS (Sewage stabilization pond)

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		_	_	3888	_	_	_	4320	1624	_	_	4493	_	3581	
BIOCHEMICAL OXYGEN	ACTUAL	_	_	22.2	_	_	_	21.6	8.1	_	_	31	_	20.7	
DEMAND	REQUIREMENT			58.3				64.8	24.4			67.4		53.7	
SUSPENDED	ACTUAL	_	_	15.6	_	_	_	121	45.5	_	_	112	_	75.3	3
SOLIDS	REQUIREMENT			58.3				64.8	24.4			67.4		53.7	
PHOSPHORUS	ACTUAL	_	_	1.5	_	_	_	1.3	0.5	_	_	1.4	_	2.4	
TOTAL	REQUIREMENT			3.89				4.33	1.62			4.49		3.58	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Suncor Sunoco Group Sarnia

INDUSTRIAL ACTIVITY: Petroleum Refining

RECEIVING WATERBODY: DIRECT: St. Clair River

INDIRECT:

DESCRIPTION OF ACTIVITY: Crude oil is converted into a wide range of petroleum products.

EFFLUENT QUALITY: Contains soluble and insoluble compounds from crude oil at trace levels

EFFLUENT TREATMENT:

DISCHARGE TYPE: continuous at shore

COMMENTS:

Annual compliance. One exceedance of phenols in March, due to reported spill.

IMIS NUMBER: 0000490102 SIC CODE: 3651 MOE REGION: Southwest DISTRICT: Sarnia

d0886

SUNCOR SUNOCO GROUP - 0000490102

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		95000	89000	92000	101000	105000	108000	108000	109000	86000	120000	108000	85100	100570	
CHLORIDES		3160	3000	2240	2400	1640	3320	1940	2250	2140	2780	3000	2950	2570	
AMMONIA NITROGEN	ACTUAL	39	60	31	26	37	0*	33	20	11	1	18	21	23.3	
	REQUIREMENT	950	840	920	1010	1050	1080	1080	1090	860	1200	1080	851	1005	
PHENOLS	ACTUAL	0.43	1.69	2.07	0.64	0.42	0.25	0.3	0.27	1.19	0.25	0.29	0.23	0.67	1
	REQUIREMENT	1.9	1.78	1.84	2.02	2.1	2.18	2.16	2.18	1.72	2.4	2.16	1.7	2.01	
SUSPENDED SOLIDS	ACTUAL	154	228	247	248	162	284	247	167	308	170	266	181	222	
	REQUIREMENT	1425	1335	1380	1515	3080	1620	1620	1635	1290	1800	1620	1280	1508	
DISSOLVED SOLIDS	ACTUAL	6580	8280	8230	6200	3700	6520	7970	8290	11400	6270	7150	6280	7240	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
OIL AND GREASE	ACTUAL	42	55	68	36	46	54	20	19	132	0*	46	15	44.1	
	REQUIREMENT	950	890	920	1010	1050	1080	1080	1090	860	1200	1080	851	1005.7	
SULPHIDES	ACTUAL	0	0	0	0	0	0	0.2	0	0	4.9	0*	0	0.308	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
TOTAL CARBON		256	275	141	72	114	128	212	83	204	287	180	455	201	
		-	-	-	-	-	-	-	-	-	-	-	-	-	

d1186

* INTAKE EXCEEDED DISCHARGE

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Tend-R-Fresh Div. Maple Leaf Mills Poultry Products Inc., Petersburg

INDUSTRIAL SECTOR: Food and Beverage

RECEIVING WATERBODY: DIRECT: Alder Creek to Nith River to Grand River

INDIRECT: 195 km to Lake Erie

DESCRIPTION OF ACTIVITY: Birds are slaughtered, processed, readied for retail sale.

EFFLUENT QUALITY: Contains dissolved organics and phosphorus.

EFFLUENT TREATMENT: Screening, aeration, phosphorus removal, sedimentation and chlorination.

DISCHARGE TYPE: seven day continuous flow through an open outfall

COMMENTS:

Not in compliance.
The 1985 limits are more stringent than the 1984 limits.
Discharge quality did not meet limits. Company received Ministry approval in August '85 to upgrade its wastewater treatment plant by adding new influent screen, changing one aeration cell to an aerobic digester, adding phosphorus removal and converting a facultative lagoon to a sludge drying/storing facility. Upgrading program was completed in May '86.
Discharge has been in compliance since then.

IMIS NUMBER: 0001490002 SIC CODE: 1012 MOE REGION: West Central DISTRICT: Cambridge

d0886

TEND-R-FRESH DIVISION - 0001490002
MAPLE LEAF MILLS POULTRY PRODUCTS LTD

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY
(FLOW LIMIT 2272)

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		669	1230	1460	1580	1410	1410	1410	1410	1410	1410	1630	1630	1390	
BIOCHEM. OXYGEN DEMAND	ACTUAL	3.9	51.1	512	411	6.4	14.8	82.5	41	9.6	5.2	14.9	11.2	97	5
	REQUIREMENT	32	32	32	32	32	32	32	32	32	32	32	32	32	
pH		6.75	6.75	7.15	6.75	7.3	_	7.5	7.1	7.5	7.5	7.4	7.1		
PHOSPHORUS TOTAL	ACTUAL	2.9	7	9.6	12.3	9.7	8	7.1	13.8	6.2	4.4	1.95	3.2	7.18	12
	REQUIREMENT	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	
SUSPENDED SOLIDS	ACTUAL	15.1	221	330	347	268	28.3	64.3	59.3	19.8	16.9	19.5	27.6	118	6
	REQUIREMENT	32	32	32	32	32	32	32	32	32	32	32	32	32	
OIL AND GREASE	ACTUAL	11.7	43.4	216	124	22.9	19.4	37.9	35.3	25.8	22.6	50.1	60.5	55.8	8
	REQUIREMENT	24	24	24	24	24	24	24	24	24	24	24	24	24	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Texaco Canada Inc. (Nanticoke Refinery) Jarvis

INDUSTRIAL SECTOR: Petroleum Refining

RECEIVING WATERBODY: DIRECT: Lake Erie

INDIRECT:

DESCRIPTION OF ACTIVITY: Crude oil is converted into a wide range of petroleum products.

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Primary oil separation, equalizarion, dissolved air flotation, biological treatment, clarification and filtration, and final holding ponds.

DISCHARGE TYPE: continuous through a submerged diffuser

COMMENTS:

In compliance.
Degree of air cooling is maximized.

IMIS NUMBER: 0000520205 SIC CODE: 3651 MOE REGION: West Central DISTRICT: Haldimand-Norfolk/Brant

d0886

TEXACO CANADA INC - 0000520205
NANTICOKE REFINERY

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
CONTL PT 0200															
FLOW		3570	3240	3560	3980	3780	3040	2220	2840	2500	2160	3490	3970	2950	
AMMONIA' NITROGEN	ACTUAL	1.16	10.2	0.45	0	0.53	0.64	0.063	0.19	0.76	0.17	0.67	0.55	1.28	
	REQUIREMENT	35.7	32.4	35.6	39.8	37.8	30.41	22.2	28.4	25	21.6	34.9	39.7	29.5	
PHENOLS	ACTUAL	0.018	0.027	0.032	0.023	0.027	0.027	0.0046	0.0091	0.0091	0.0046	0.014	0.0091	0.017	
	REQUIREMENT	0.0714	0.0648	0.0712	0.0796	0.0756	0.0608	0.044	0.0568	0.05	0.0432	0.0698	0.0794	0.0597	
SUSPENDED SOLIDS	ACTUAL	0	0	0	0	13.3	12.7	3.09	17.7	6.51	0	0	0	3.81	
	REQUIREMENT	53.6	48.6	53.4	59.7	56.7	45.6	33.3	42.6	37.5	32.4	52.4	59.6	44.3	
OIL AND GREASE	ACTUAL	0	0	5.5	0	3.59	3.96	0.164	2.3	2.96	2.62	4.09	0	2.1	
	REQUIREMENT	35.7	32.4	35.6	39.8	37.8	30.4	22.2	28.4	25	21.6	34.9	39.7	32	
SULPHIDES	ACTUAL	0	0.146	0	0	0	0.009	0.123	0.445	0	0.036	0	0	0.063	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: The Canadian Salt Company Ltd. Windsor

INDUSTRIAL SECTOR: Industrial Minerals

RECEIVING WATERBODY: DIRECT: Detroit River

INDIRECT: Lake Erie

DESCRIPTION OF ACTIVITY: Salt is mined and prepared for use.

EFFLUENT QUALITY: Contains dissolved salt (chlorides).

EFFLUENT TREATMENT:

DISCHARGE TYPE: continuous

COMMENTS:

Suspended Solids not in compliance.
Company met monthly requirements for TSS nine out of 12 times.
Sampling survey is to be conducted by M.O.E.

IMIS NUMBER: 0001040005 SIC CODE: 079 793 MOE REGION: Southwest DISTRICT: Windsor

d0886

THE CANADIAN SALT CO. LTD - 0001040005

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		16900	17700	15900	22400	22000	22600	21200	21400	24000	21700	24300	22000	21000	
ALKALINITY AS CaCO3	ACTUAL	12		8	63	83.4	86	7	12	31	3	1	10	28.8	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
CHLORIDE	ACTUAL	11200	20200	13400	19300	15400	14100	16600	11300	13000	8970	9930	8110	13500	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
pH		8.3	8.35	7.8	7.95	8.3	8.25	8.25	8.1	7.95	7.75	7.95	7.8		
DISSOLVED SOLIDS	ACTUAL	19900	32900	21500	31200	26100	23700	31100	20700	21200	14600	19500	15000	23100	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
SUSPENDED SOLIDS	ACTUAL	258	286	115	-	42	11	252	241	569	309	318	364	251	3
	REQUIREMENT	270	266	239		330	339	318	321	360	326	365	330	315	
TOTAL SOLIDS	ACTUAL	20100	33100	21600	31200	26200	23700	31400	20900	21700	15000	19800	15400	23300	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Union Carbide Canada Ltd. Corunna

INDUSTRIAL ACTIVITY: Organic Chemicals, Synthetic Fibres

RECEIVING WATERBODY: DIRECT: St. Clair River

INDIRECT:

DESCRIPTION OF ACTIVITY: Feedstock from neighbouring petroleum refineries is converted into polyethylene resins.

EFFLUENT QUALITY: Contains organic compounds at trace levels

EFFLUENT TREATMENT:

DISCHARGE TYPE: batch discharge through an extended outfall

COMMENTS:

Phosphorus and Suspended Solids not in compliance.
Exceedances in suspended solids suspected to be clay from final effluent pond.
Item currently under investigation.

IMIS NUMBER: 0000380105 SIC CODE: 373 MOE REGION: Southwest DISTRICT: Sarnia

d0886

UNION CARBIDE CANADA LTD - 0000380105

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		1900	2260	_	2020	1870	2160	2060	2040	2230	2620	2780	2080	2180	
KJELDAHL NITROGEN	ACTUAL	5.7	4.5	_	2.07	10.5	2.1	1.3	2.3	2.1	2.9	2.4	_	3.36	
	REQUIREMENT	_	_	_	_	_	_	_	_	_	_	_	_	_	
pH		7.1	7	_	7.9	7.8	7.5	7.7	7.8	7.2	7.8	7.5	7.4	7.5	
PHOSPHORUS TOTAL	ACTUAL	0.53	2.4	_	1.53	1.53	1.19	1.15	3.06	1.07	1.1	1.36	1.64	1.5	
	REQUIREMENT														
DISSOLVED SOLIDS	ACTUAL	485	631	_	606	539	551	492	487	392	524	515	651	534	
	REQUIREMENT	_	_	_	_	_	_	_	_	_	_	_	_	_	
SUSPENDED SOLIDS	ACTUAL	42.6	49.1	_	18.4	67	_	34.6	77.3	46.2	61.8	83.5	108	58.8	9
	REQUIREMENT	28.5	33.9		30.3	28.05		30.9	30.6	33.5	39.3	41.7	31.2	33	
TOTAL CARBON	ACTUAL	27.6	23.5	_	21.1	13.7	24.8	37	43.8	51.8	15.3	31.7	15	27.7	
	REQUIREMENT	_	_	_	_	_	_	_	_	_	_	_	_	_	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Wickes Manufacturing Company Ltd.
& PLANT LOCATION: (Formerly Windsor Bumper Co. Ltd.) Windsor
INDUSTRIAL SECTOR: Metalwork manufacturing

RECEIVING WATERBODY: DIRECT : 3.3 km from Little R.

INDIRECT:

DESCRIPTION OF ACTIVITY:

EFFLUENT QUALITY:

EFFLUENT TREATMENT:

DISCHARGE TYPE: Continuous

COMMENTS:

Nickel and Suspended Solids not in compliance.
Company is examining alternatives for final treatment (filtration) of effluent.
The final effluent was sampled 2 times during 1985 and tested by aerated 96-hr. rainbow trout bioassays.
The LC50's were estimated to have been equal to 24.4% and 55.1%.

IMIS NO.: 0001060003 SIC CODE: 304 MOE REGION: Central DISTRICT: Windsor

d0986

WICKES MANUFACTURING CO. LTD - 0001060003
(formerly Windsor Bumper Co. Ltd.)

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		915	1090	1060	993	1070	1320	1220	1540	1240	1020	874	920	1100	
CHROMIUM	ACTUAL	0.6	0.5	0.3	0.3	0.2	0.3	0.5	1.1	0.9	0.9	0.4	0.4	0.533	
	REQUIREMENT	0.915	1.09	1.06	0.993	1.07	1.32	1.22	1.54	1.24	1.02	0.874	0.92	1.1	
CHROMIUM +6	ACTUAL	0.1	0.2	0.06	0.15	0.1	0.1	0.4	0.6	0.4	0.08	0.12	0.18	0.208	
	REQUIREMENT	–	–	–	–	–	–	–	–	–	–	–	–	–	
IRON	ACTUAL	0.2	0.2	0.3	0.2	0.4	0.7	0.7	0.8	0.4	0.5	0.4	0.4	0.433	
	REQUIREMENT	0.915	1.09	1.06	0.993	1.07	1.32	1.22	1.54	1.24	1.02	0.874	0.92	1.1	
NICKEL	ACTUAL	1.1	1.2	0.8	0.9	1.07	1.3	0.9	1.8	1.2	1.2	0.8	0.8	1.09	4
	REQUIREMENT	0.915	1.09	1.06	0.993	1.07	1.32	1.22	1.54	1.24	1.02	0.874	0.92	1.1	
DISSOLVED SOLIDS	ACTUAL	3010	3680	2790	3150	2580	3980	2740	4350	4380	3140	1860	2670	3190	
	REQUIREMENT	–	–	–	–	–	–	–	–	–	–	–	–	–	
SUSPENDED SOLIDS	ACTUAL	39.5	38.4	28.3	61.7	24.6	36.9	28.2	27.4	36.4	39.9	17.3	27.9	33.9	12
	REQUIREMENT	13.7	16.4	15.9	14.9	16.1	19.8	18.3	23.1	18.6	15.3	13.11	13.8	16.5	
ZINC	ACTUAL	0.05	0.04	0.02	0.03	0.03	0.05	0.02	0.06	0.07	0.1	0.7	0.8	0.164	
	REQUIREMENT	0.915	1.09	1.06	0.993	1.07	1.32	1.22	1.54	1.24	1.02	0.874	0.92	1.1	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Atlas Steel Company, Welland

INDUSTRIAL SECTOR: Iron and Steel

RECEIVING WATERBODY: DIRECT: Welland River to Niagara River

INDIRECT:

DESCRIPTION OF ACTIVITY: Secondary steel industry; recycle scrap metal for melting in electric furnace. Various grades of stainless steel made. Not an integrated mill. No coking operations or blast furnaces.

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Contact and non-contact cooling water treated at two filtration plants. Pickling acids and rinses treated at waste acid solidification plant. Tertiary treatment consists of pH adjustment and heavy metal (chrome, lead) removal and filtration.

DISCHARGE TYPE: continuous

COMMENTS:

Target loads set by MOE industrial effluent concentration guidelines.
Substantial heavy metal loading reductions compared to previous years.
Flow measurements based on intake volume corrected for municipal sewer discharge.
Suspended Solids did not meet five monthly requirements.
Other parameters in compliance.

IMIS NUMBER: 0001610005 SIC CODE: 291 MOE REGION: West Central DISTRICT: Welland

d0886

ATLAS STEEL CO. - 0001610005

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		28395	28518	25628	21066	22649	21324	21212	30648	28986	22062	22062	23493	24671	
CADMIUM TOTAL	ACTUAL	_	0.57	0.513	0.423	0.453	0.426	0.424	0.061	0.058	0.044	0.044	0.047	0.278	
	REQUIREMENT	28.4	28.52	25.63	21.07	22.65	21.32	21.21	30.65	28.99	22.06	22.06	23.5	24.67	
CHROMIUM TOTAL	ACTUAL	_	1.711	2.503	9.48	5.66	5.11	1.485	1.532	1.449	0.652	0.961	4.665	3.42	
	REQUIREMENT	38.4	28.52	25.63	21.07	22.65	21.32	21.31	30.65	28.99	22.06	23.5	24.67	24.7	
SUSPENDED SOLIDS	ACTUAL	_	_	637	1000	593	2410	201	199	183	83.8	311	705	672	5
	REQUIREMENT	425.93	427.77	384.42	316	340	320	318	460	435	331	331	352	370	
OIL AND GREASE	ACTUAL	_	_	12.8	25.28	45.3	21.32	61.51	15.32	57.9	64	81.6	31.5	40.6	
	REQUIREMENT	425.93	427.77	384.42	316	340	320	318	460	495	331	331	352	370	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Bakelite Thermosets Ltd.
& PLANT LOCATION: Belleville

INDUSTRIAL SECTOR: Organic Chemicals, Synthetic Fibres

RECEIVING WATERBODY: DIRECT : Bay of Quinte

INDIRECT: Lake Ontario

DESCRIPTION OF ACTIVITY:

EFFLUENT QUALITY: Contains soluble and insoluble organics such as phenols

EFFLUENT TREATMENT: None

DISCHARGE TYPE: Continuous

COMMENTS:

Discharge consists of cooling water and surface yard runoff.
The accuracy of flow measurement and sampling procedure are suspect. Flow measurement and composite sampling are being investigated. No receiving water impact has been found to date.
Phenols in exceedance.

IMIS NO.: 0001860006
SIC CODE: 373 3783
MOE REGION: Southeast
DISTRICT: Kingston

d0886

BAKELITE THERMOSETS LTD - 0001860006

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		8640	8640	8640	8640	7500	7730	7500	8410	8410	8410	7270	7270	8092	
PHENOLS	ACTUAL	0.00173	0.558	0.157	0.204	1.01	0.3	0.136	0.273	0.117	0.142	0.161	0.142	0.267	6
	REQUIREMENT	0.173	0.173	0.173	0.173	0.15	0.154	0.15	0.168	0.168	0.168	0.144	0.144	0.161	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Beaver Wood Fibre Company
Thorold

INDUSTRIAL SECTOR: Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT: Beaverdams Creek to Twelve Mile Creek
INDIRECT: 13.3 km to Lake Ontario

DESCRIPTION OF ACTIVITY: Paperboard is made from pulp and clean wastepaper.

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Waste water recycling.

DISCHARGE TYPE: continuous through a submerged outfall

COMMENTS:

A section 126, EPA survey has been drafted. Target loads set by Pulp and Paper Committee consistent with best practicable technology.
BOD and Suspended Solids not in compliance.

IMIS NUMBER: 0001620004 SIC CODE: 271 MOE REGION: West Central DISTRICT: Welland

d0886

BEAVER WOOD FIBRE CO. LTD. - 0001620004

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		14300	14700	14400	14200	13900	13700	13600	14200	13600	14200	13600	13500	13990	
BIOCHEM OXYGEN DEMAND	ACTUAL	2700	3500	1800	2200	2800	3000	5000	5100	3300	2600	1800	1630	2950	8
	REQUIREMENT	2483	2483	2483	2483	2483	2483	2483	2483	2483	2483	2483	2483	2483	
DISSOLVED SOLIDS	ACTUAL	3900	4400	4700	4900	4500	4700	4400	3600	3700	3900	2700	2440	3990	
	REQUIREMENT														
SUSPENDED SOLIDS	ACTUAL	1700	2900	800	2400	1200	1800	2400	2100	800	1300	1000	711	1590	9
	REQUIREMENT	904	904	904	904	904	904	904	904	904	904	904	904	904	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: B. F. Goodrich
Niagara Falls

INDUSTRIAL SECTOR: Organic Chemicals, Synthetic Fibres

RECEIVING WATERBODY: DIRECT: Welland River to Niagara River
INDIRECT:

DESCRIPTION OF ACTIVITY: Polyvinyl chloride resins are made from vinyl chloride monomer.

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Conventional secondary sewage treatment plant followed by aerated lagoon followed by facultative lagoon.

DISCHARGE TYPE: continuous through an open outfall

COMMENTS:

Effluent quality not in compliance for BOD5 and Suspended Solids. Activated sludge process out of service. Modifications to treatment system required, Section 24 OWRA submitted.

IMIS NUMBER: 0000370304 SIC CODE: 373 MOE REGION: West Central DISTRICT: Welland

d0886

B.F. GOODRICH

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		966	1377	2740	1527	1547	1721	1644	1541	2000	1986	2971	2006	1836	
BIOCHEM. OXYGEN	ACTUAL	-	48	74	30.5	21.8	46.5	38.4	2.64	6.78	7.43	94.9	38.2	37.2	7
DEMAND	REQUIREMENT	14.5	20.7	41.1	22.9	23.2	25.8	24.7	23.1	30	23.78	44.6	30.1	27.5	
pH		6.2	6.3	6.5	6.2	6.1	6.3	6.2	6.3	6.3	6.4	6.1	6.2	6.26	
PHOSPHORUS	ACTUAL	0.59	0.12	1.22	0	0.4	0.15	0.22	0.32	0.25	1.51	0.16	0	0.412	
TOTAL	REQUIREMENT	0.966	1.38	2.74	1.53	1.55	1.72	1.64	1.54	2	1.99	2.97	2.01	1.88	
SUSPENDED	ACTUAL	8.31	33	64.4	3	10.8	11.9	9.58	2.04	4.72	19.4	41.6	104.2	26.1	3
SOLIDS	REQUIREMENT	14.5	20.7	41.1	23	23.3	25.8	24.6	23.1	30	29.9	44.6	30.2	28.1	
TOTAL SOLIDS	ACTUAL	547	589	525	57.8	173	535	525	39.9	39.3	605	2115	757	542	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
VINYL CHLORIDE	ACTUAL	0.4	0.14	0.32	0.02	0.01	0.04	0	0	0	0	-	1.25	0.198	
MONOMER	REQUIREMENT	0.97	1.38	2.74	1.53	1.55	1.72	1.64	1.54	2	1.99	-	2.01	1.84	
CHEMICAL OXYGEN	ACTUAL	68.1	155	168	27.1	27.7	95.6	65.8	25.3	37	37.6	77.8	42.4	72.9	
DEMAND	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
AMMONIUM	ACTUAL	0.44	1.06	0.41	6.99	1.3	4.68	2.05	1.58	1.16	0.72	0.18	0.02	1.72	
FILTERED	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Borg-Warner Chemicals
& PLANT LOCATION: Cobourg

INDUSTRIAL SECTOR: Organic Chemicals and Synthetic Fibres

RECEIVING WATERBODY: DIRECT : Lake Ontario

INDIRECT:

DESCRIPTION OF ACTIVITY: Formulation of ABS resins (plastics).

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Primary and secondary - extended aeration.

DISCHARGE TYPE: continuous through a submerged diffuser

COMMENTS:

This waste water treatment plant was under construction to upgrade primary section for most of 1985. This caused operating problems resulting in exceedances of Suspended Solids and Total Phosphorus. The construction was completed in early 1986.
Certificate of Approval 4-003-85-006 issued for plant, July 23, 1985. The revised effluent criteria are to be in force upon completion of construction (early '86).
The following table uses actual flow times the actual concentration for the " ACTUAL " figure, and the actual flow times the Certificate of Approval value or set concentrations for the " REQUIRED ".

IMIS NO.: 0000600007 SIC CODE: 377 MOE REGION: Central DISTRICT: Peterborough

d0886

BORG-WARNER CHEMICALS - 0000600007

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		1806	1697	1647	1906	2134	1925	1802	1906	1970	1729	1834	1315	1806	
CHEMICAL OXYGEN DEMAND	ACTUAL	195	144	49	74	124	108	58	82	65	69	130	49	96	
	REQUIREMENT	253	238	231	267	299	270	252	267	276	242	257	184	253	
BIOCHEM. OXYGEN DEMAND	ACTUAL	36	21	7	13	41	27	7	16	5	10	16	21	18	
	REQUIREMENT	54	51	49	57	64	58	54	57	59	52	55	39	54	
SUSPENDED SOLIDS	ACTUAL	105	76	13	32	24	19	18	27	128	31	71	241	65	5
	REQUIREMENT	54	51	49	57	64	58	54	57	59	52	55	39	54	
PHOSPHORUS TOTAL	ACTUAL	2.5	1	0.6	0.8	4.3	7.9	8.1	13.9	8.8	10.4	8.8	0.8	5.7	6
	REQUIREMENT	4.5	4.2	4.1	4.8	5.3	4.8	4.5	4.8	4.9	4.3	4.6	3.3	4.5	
KJELDAHL NITROGEN	ACTUAL	54	65	61	61	36	44	7	19	11	14	5	6	32	
	REQUIREMENT	90	85	82	95	107	96	90	95	99	86	92	66	90	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Canadian Canners Ltd. St. Davids

INDUSTRIAL SECTOR: Food and Beverage

RECEIVING WATERBODY: DIRECT: Four Mile Creek
INDIRECT: 12 km to Lake Ontario

DESCRIPTION OF ACTIVITY:

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Facultative lagoon.

DISCHARGE TYPE: batch discharge usually in fall of year

COMMENTS:

Suspended Solids not in compliance.
Effluent quality met the Ministry target load which was set by the MOE industrial effluent concentration guidelines.
All loadings are gross loadings; net loadings met MOE guidelines.

IMIS NUMBER: 0001930007 SIC CODE: 102 MOE REGION: West Central DISTRICT: Welland

d0886

CANADIAN CANNERS LTD. - 0001930007

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		-	-	-	-	1910	-	-	-	-	-	-	-		
BIOCHEM. OXYGEN DEMAND	ACTUAL REQUIREMENT	-	-	-	-	16.4 28.7	-	-	-	-	-	-	-		
PHOSPHORUS TOTAL	ACTUAL REQUIREMENT	-	-	-	-	0.5 1.91	-	-	-	-	-	-	-		
SUSPENDED SOLIDS	ACTUAL REQUIREMENT	-	-	-	-	38.9 28.7	-	-	-	-	-	-	-		1

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Canadian Oxy-Durez
Dunlop
Fort Erie

INDUSTRIAL SECTOR: Organic Chemicals, Synthetic Fibres

RECEIVING WATERBODY: DIRECT: Frenchmans Creek to Niagara River

INDIRECT:

DESCRIPTION OF ACTIVITY: Manufactures phenol-formaldehyde type resins.

EFFLUENT QUALITY: Recycles waste water; cooling water discharge only.

EFFLUENT TREATMENT:

DISCHARGE TYPE: continuous through an open outfall

COMMENTS:

Not in compliance for phenols.
Indirect contamination (air emissions and material handling) of process waste waters.
Flow meter device out of service for May, July, October, November and December.
Phenol concentrations for these months are 0, 10, 17, 16, and 16 ppb: all below the 20 ppb limit.

IMIS NUMBER: 0001590009 SIC CODE: 3783 MOE REGION: West Central DISTRICT: Welland

d0886

CANADIAN OXY-DUREZ - 0001590009

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		142	200	125	171	_	149	_	162	41.1	_	_	_	141	
PHENOLS	ACTUAL	0.0043	0.0113	0.006	0.004	_	0.00032	_	0.00022	0.00073	_	_	_	0.0038	4
	REQUIREMENT	0.0028	0.004	0.0025	0.0034		0.003		0.0032	0.00082				0.0028	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Celanese Canada Ltd. Ernestown Twp.

INDUSTRIAL SECTOR: Organic Chemicals, Synthetic Fibres

RECEIVING WATERBODY: DIRECT: Lake Ontario

INDIRECT:

DESCRIPTION OF ACTIVITY: Textiles are made from polyester fibre produced by the reaction of ethylene glycol and terephthalic acid

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Secondary activated sludge.

DISCHARGE TYPE: Continuous

COMMENTS:

Effluent objectives set out in Certificate of Approval #4-006-86-006 dated June 16th, 1986 for BOD at 30 mg/L (loading 136 kg/day) and COD at 60 mg/L (272 kg/day).
BOD, COD and Suspended Solids not in compliance.

IMIS NUMBER: 0001730001 SIC CODE: 183 MOE REGION: Southeast DISTRICT: Kingston

d0886

CELANESE CANADA (MILLHAVEN) INC - 0001730001

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		10600	13050	13500	13500	17800	26300	13600	21600	_	_	13400	11400	15300	
BIOCHEM. OXYGEN	ACTUAL	328	612	781	242	605	315	95	410	_	_	229	386	400	9
DEMAND	REQUIREMENT	136	136	136	136	136	136	136	136			136	136	136	
CHEMICAL OXYGEN	ACTUAL	571	1080	1370	430	1050	550	180	710	_	450	401	671	679	10
DEMAND	REQUIREMENT	272	272	272	272	272	272	272	272		272	272	272	272	
SUSPENDED	ACTUAL	74	495	216	81	659	262	122	108	_	_	134	136	229	2
SOLIDS	REQUIREMENT	265	326	338	338	445	658	340	540			335	285	383	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Corby Distilleries Ltd.
& PLANT LOCATION: Corbyville

INDUSTRIAL ACTIVITY: Beverage manufacturer

RECEIVING WATERBODY: DIRECT : Moira R.

INDIRECT: Bay of Quinte, Lake Ontario

DESCRIPTION OF ACTIVITY: Distillery, producing industrial and beverage alcohols.

EFFLUENT QUALITY: Chemical oxygen demand of 120 mg/L and suspended solids of 60 mg/L.

EFFLUENT TREATMENT: Extended aeration activated sludge plant discharging to polishing lagoon and then to Moira River.

DISCHARGE TYPE: Continuous (when operating)

COMMENTS:

Treatment plant operated on an intermittent basis only, during periods of production.
No exceedances based on concentration objectives.

IMIS NO.: 0001870005 SIC CODE: 109 MOE REGION: Southeast DISTRICT: Kingston

d0886

CORBY DISTILLERIES LTD - 0001870005

CONCENTRATIONS IN MG/L
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FIELD pH		-	7	7.4	7.4	-	-	-	-	-	-	-	-		
CHEMICAL OXYGEN DEMAND	ACTUAL		75	68	74										
	REQUIREMENT														
SUSPENDED SOLIDS	ACTUAL		20	20	31										
	REQUIREMENT														

FLOWS NOT AVAILABLE.

WASTEWATER DISCHARGE SUMMARY
1985

INDUSTRIAL SECTOR: Inorganic Chemicals

COMPANY NAME Cyanamid Canada Inc.
& PLANT LOCATION: Niagara Falls

RECEIVING WATERBODY: DIRECT: Niagara River and Queenston-Chippewa Hydro Canal to Niagara River
INDIRECT:

DESCRIPTION OF ACTIVITY: Calcium carbide is produced by electric arc furnaces.

EFFLUENT QUALITY: Cooling water from furnace operation.

EFFLUENT TREATMENT:

DISCHARGE TYPE: continuous through two outfalls

COMMENTS:

In compliance.
Effluent quality met all MOE guidelines. Target Loads set by MOE industrial effluent concentration guidelines.
Company closed February and March due to strike.

IMIS NUMBER: 0001550003 SIC CODE: 3782 MOE REGION: West Central DISTRICT: Welland

d0886

CYANAMID CANADA INC - 0001550003

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		10800	_	_	32400	32400	32400	32400	32400	32400	32400	32400	32400	32400	
CYANIDE	ACTUAL	0.108	_	_	0.043	0.648	0.54	0.648	0.032	0.226	4.23	2.24	0.745	0.946	
	REQUIREMENT	21.6			64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	60.5	
pH		8.12	_	_	7.6	8.3	7.9	8.3	8	8.3	8	8.6	7.9		
PHOSPHORUS TOTAL	ACTUAL	0	_	_	1.5	4.2	0	0.022	0	0.065	0.22	0.13	0	0.614	
	REQUIREMENT	10.8			32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.4	30.2	
SUSPENDED SOLIDS	ACTUAL	0	_	_	0	130	108	86.4	73.4	62.6	322	190	0	97.2	
	REQUIREMENT	162			486	486	486	486	486	486	486	486	486	454	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Cyanamid Canada Inc.
Welland Plant
Niagara Falls

INDUSTRIAL SECTOR: Organic Chemicals, Synthetic Fibres

RECEIVING WATERBODY: DIRECT: Thompson's Creek to Welland River to Niagara River

INDIRECT:

DESCRIPTION OF ACTIVITY: Manufacturing of organic and inorganic nitrogen and phosphorus products.

EFFLUENT QUALITY: Process and cooling waters.

EFFLUENT TREATMENT: Wastewater discharges to product recovery system and then to open outfall.

DISCHARGE TYPE: continuous through an open outfall

COMMENTS:

BOD, Total Phosphorus, Suspended Solids and Ammonia Nitrogen not in compliance.
Loadings set by concentrations defined in Control Order.
Control Order expired March 1985.
Company has been reporting total ammonia - Control Order specifies free ammonia to be reported.
1986 results indicate compliance.
The final effluent was sampled 6 times during 1985 and tested by aerated 96-hr. rainbow trout bioassays.
Five of the samples were estimated to have been non-lethal.

IMIS NUMBER: 0001550102 SIC CODE: 372 MOE REGION: West Central DISTRICT: Welland

d0886

CYANAMID CANADA - 0001550102

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		21300	30100	21000	26600	14100	21200	23900	25300	18400	23900	45900	29600	25100	
pH		7.9	7.4	7.4	6.5	6.3	6.6	6.5	6.5	6.5	6.3	6.4	6.6		
BIOCHEM OXYGEN DEMAND	ACTUAL	-	-	-	-	-	-	71	25.3	18.4	716.3	129.3	0	192.06	1
	REQUIREMENT							355	379	276	358	680	444	376	
NITRATES	ACTUAL	768	1168	631	566	311	529	355	430	322	525	701	913	601.5	
	REQUIREMENT	1065	1506	1052	1830	706	1060	1183	1265	919	1194	2293	1482	1255	
TOTAL NITROGEN	ACTUAL	2840	4170	2270	2120	1017	1757	1135	1644	1132	1624	753	2146	1884	
	REQUIREMENT														
PHOSPHORUS TOTAL	ACTUAL	34.1	41.9	31.6	26.6	12.7	14.8	21.3	17.7	11	23.9	25.9	23.7	23.77	3
	REQUIREMENT	21.3	30.1	21	26.6	14.1	21.2	23.9	25.3	18.4	23.9	45.9	29.6	25.1	
SUSPENDED SOLIDS	ACTUAL	663	150	0	0	0	0	0	0	367	0	0	148	110	2
	REQUIREMENT	213	301	210	266	141	212	237	253	276	239	459	296	251	
TOTAL SOLIDS	ACTUAL	15300	11200	7500	6760	3190	3390	1770	0	3638	5600	6880	5440	5047.7	
	REQUIREMENT														
DISSOLVED SOLIDS	ACTUAL	8160	11020	7880	8842	3120	3390	2560	910	3270	2230	6200	13660	5993	
	REQUIREMENT														
KJELDAHL NITROGEN	ACTUAL	201	301	105	2.66	7.06	10.6	23.7	12.6	3.7	4.8	0	24.6	59	
	REQUIREMENT														
AMMONIA NITROGEN	ACTUAL	306.72	412.37	157.5	159.6	119.85	175.96	102.77	151.8	119.6	143.4	91.8	68.08	167.45	2
	REQUIREMENT	213	301	210	266	141	212	237	253	184	239	459	296	251	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Dofasco Inc. Hamilton

INDUSTRIAL SECTOR: Iron and Steel

RECEIVING WATERBODY: DIRECT: Hamilton Harbour
INDIRECT: Lake Ontario

DESCRIPTION OF ACTIVITY: All phases of iron & steel production including 46 Coke ovens, 4 Blast Furnaces, 2 B.O.F. shops and numerous rolling mills.

EFFLUENT QUALITY: Contains heavy metals and light organics.

EFFLUENT TREATMENT: Recycle, clarification, filtration, oil recovery and ion exchange.

DISCHARGE TYPE: continuous through [illegible] shore outfalls

COMMENTS:

Phenols and Suspended Solids not in compliance.
Control Order requirements for phenol control.
Suspended solids control completed early 1986.
Future reductions in suspended solids will be accomplished by eliminating overflows from the #1 Hot Mill Filtration Plant and #1 Melt Shop slurry sump with the possible installation of a Blast Furnace recirculating water system. Phenol will be reduced by improved online treatment time for the Zimpro/HCN tower blowdown thus reducing overflows to sewer and by diversion of the Biological Treatment Plant effluent to the Sanitary Sewer. An outfall from the #2 Hot Strip Mill was added in 1984.
Iron limits set at 10 mg/L.
All loadings as net data, arithmetic means.
Effluent quality met seven of nine target loads based on monthly averages.

IMIS NUMBER: 000146000 SIC CODE: 291 MOE REGION: West Central DISTRICT: Hamilton

10886

DOFASCO INC - 0001460005

ALL LOADS IN KG/DAY
ALL FLOWS IN 1000 CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		786	786	786	786	786	786	786	785	785	785	786	786	787000	
BIOCHEM. OXYGEN DEMAND	ACTUAL	1690	0*	725	0*	223	0*	0*	1640	197	2100	2230	778	596	
	REQUIREMENT	11800	11800	11800	11800	11800	11800	11800	11800	11800	11800	11800	11800	11800	
CYANIDE	ACTUAL	9.8	31.8	18.9	11.5	17.5	30.8	15.6	11.6	15.1	28	30.5	32.5	21.1	
	REQUIREMENT	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	
CHROMIUM TOTAL	ACTUAL	3.89	21	21.7	0	14.1	5.94	3.9	3.2	7.3	3.9	3.9	0	7.4	
	REQUIREMENT	787	787	787	787	787	787	787	787	787	787	787	787	787	
IRON TOTAL	ACTUAL	3400	5840	5020	2360	2980	2510	2540	3270	3180	2900	6890	4760	3800	
	REQUIREMENT	7870	7870	7870	7870	7870	7870	7870	7870	7870	7870	7870	7870	7870	
AMMONIA NITROGEN	ACTUAL	429	1760	804	1150	602	83.5	276	309	306	527	421	426	592	
	REQUIREMENT	7870	7870	7870	7870	7870	7870	7870	7870	7870	7870	7870	7870	7870	
pH		-	-	-	-	-	-	-	8.02	7.96	7.6	7.82	7.84		
PHENOLS	ACTUAL	18.2	21.1	12.9	19.5	3.4	1.84	1.2	1.98	1.3	6.9	3.9	4.23	8.04	3
	REQUIREMENT	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	
PHOSPHORUS TOTAL	ACTUAL	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	3	1.3	0.11	
	REQUIREMENT	787	787	787	787	787	787	787	787	787	787	787	787	787	
SUSPENDED SOLIDS	ACTUAL	9130	17200	15700	11600	15400	7520	9667	6415	14400	6180	17200	10800	11800	5
	REQUIREMENT	11800	11800	11800	11800	11800	11800	11800	11800	11800	11800	11800	11900	11800	
OIL AND GREASE	ACTUAL	1060	6920	0*	33.8	321	212	1080	259	129	0*	608	50	837	
	REQUIREMENT	11800	11806	-	-	-	-	-	-	-	-	-	-	-	
ZINC TOTAL	ACTUAL	92.4	105	104	49.8	62.4	64.3	29.3	81.4	68.1	113	593	-	124	
	REQUIREMENT	787	787	787	787	787	787	787	787	787	787	787		787	

* INTAKE EXCEEDED DISCHARGE

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Domtar Construction Materials Ltd.
(Allanburg)
Thorold

INDUSTRIAL SECTOR: Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT: Old Welland Canal
to Twelve Mile Creek
INDIRECT: 15.1 km to Lake Ontario

DESCRIPTION OF ACTIVITY: Pulp is converted into construction paper.

EFFLUENT QUALITY: Cooling and waste water discharge.

EFFLUENT TREATMENT: Waste water is recycled.

DISCHARGE TYPE: continuous into a buried portion of the Old Welland Canal.

COMMENTS:

BOD not in compliance.
A Section 126 (EPA) survey scheduled for 1985 may not be required as the company has an agreement in principal with the Regional Municipality of Niagara to discharge to municipal sewer system.
The final effluent was sampled once during1985 and tested by an aerated 96-hr. rainbow trout bioassay.
The LC50 was estimated to have been equal to 7.5%.

IMIS NUMBER: 0000140400 SIC CODE: 271 MOE REGION: West Central DISTRICT: Welland

d0886

DOMTAR CONSTRUCTION MATERIALS - 0000140400
THOROLD

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		608	582	699	725	672	705	641	713	751	779	798	751	702	
BIOCHEM. OXYGEN DEMAND	ACTUAL	742	580	659	921	654	1110	869	468	553	794	766	807	743	12
	REQUIREMENT	453	453	453	453	453	453	453	453	453	453	453	453	453	
SUSPENDED SOLIDS	ACTUAL	170	258	314	308	256	338	349	428	394	331	518	394	338	
	REQUIREMENT														

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Domtar Fine Papers
St. Catharines

INDUSTRIAL SECTOR: Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT: Old Welland Canal
to Twelve Mile Creek
INDIRECT: 9.1 km to Lake Ontario

DESCRIPTION OF ACTIVITY: Pulp and clean wastepaper is converted into paper products.

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Recycle waste water and conventional primary treatment.

DISCHARGE TYPE: continuous through an open outfall

COMMENTS:

Effluent quality met Total Suspended Solids guideline but not Biochemical Oxygen Demand Limit. Company will continue flow reduction measures to reduce BOD loading.

IMIS NUMBER: 0000140509 SIC CODE: 271 MOE REGION: West Central DISTRICT: Welland

d0886

DONTAR FINE PAPERS - 0000140509

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		9110	8680	8780	9380	9210	9700	9370	9430	9130	8990	9710	9610	9274	
BIOCHEM. OXYGEN DEMAND	ACTUAL	650	690	680	510	520	440	370	420	340	390	390	488	490	11
	REQUIREMENT	354	354	354	354	354	354	354	354	354	354	354	354	354	
DISSOLVED SOLIDS	ACTUAL	2960	3040	2990	3330	2820	2670	2670	2810	2730	2750	3030	3740	2960	
	REQUIREMENT	–	–	–	–	–	–	–	–	–	–	–	–	–	
SUPENDED SOLIDS	ACTUAL	300	240	230	320	200	160	200	509	137	–	243	240	246	
	REQUIREMENT														

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Domtar Packaging Trenton

INDUSTRIAL SECTOR: Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT: Trent River

INDIRECT: Lake Ontario (Bay of Quinte)

TYPE OF ACTIVITY: Chips are made into pulp by a sodium carbonate cook; the pulp is formed into corrugating medium.

EFFLUENT QUALITY:

EFFLUENT TREATMENT: None

DISCHARGE TYPE: Continuous

COMMENTS:

BOD and Suspended Solids not in compliance.
BOD requirement is based on an assumption for a calcium carbonate cook to fill a gap in the Federal Guideline for Pulp andPaper. A new paper machine was put on stream January 1986. Effluent requirements and a possible Control Order are under review.

IMIS NUMBER: 0000140608 SIC CODE: 271 MOE REGION: Southeast DISTRICT: Kingston

d0886

DOMTAR PACKAGING - 0000140608
TRENTON

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		1790	1690	1620	1720	2046	1980	1990	2130	1800	2250	2120	2300	1960	
BIOCHEM. OXYGEN DEMAND	ACTUAL	4960	5044	4890	5920	6610	5940	4800	4950	3630	5590	5340	5860	5300	5
	REQUIREMENT	5523	5523	5523	5523	5523	5523	5523	5523	5523	5523	5523	5523	5523	
SUSPENDED SOLIDS	ACTUAL	588	544	451	398	650	451	308	384	621	710	806	1210	593	1
	REQUIREMENT	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Domtar Wood Preserving
& PLANT LOCATION: Trenton
INDUSTRIAL SECTOR: Wood Preserver

RECEIVING WATERBODY: DIRECT : Trent River

INDIRECT: Bay of Quinte, Lake Ontario

DESCRIPTION OF ACTIVITY: Wood preserving: Creosote and oil for hardwood railway ties and oil and pentachlorophenol for utility poles.

EFFLUENT QUALITY: Contamination by chlorophenol, phenols and low levels of several priority pollutants.

EFFLUENT TREATMENT: A portion of the discharge is treated using activated carbon filters.

DISCHARGE TYPE: Continuous

COMMENTS:

Not in compliance.
Domtar will be submitting an application for approval of an upgrade to their effluent treatment process in the spring of 1987.
Required treatment effluent objectives for carbon filtration system set out in Certificate of Approval #4-081-81 dated September 21st, 1982.
Phenols: 20 micrograms/L; maximum loading .014 kg/day.
Pentachlorophenol: 100 micrograms/L; maximum loading .68 kg/day.

IMIS NO.: 0000141200 SIC CODE: 2591 MOE REGION: Southeast DISTRICT: Kingston

d0886

DOMTAR WOOD PRESERVING - 0000141200
TRENTON

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		-	-	-	972	955	871	1150	1051	827	977	1470	847	1013	
PHENOLS	ACTUAL	-	-	-	0.063	0.063	0.0914	0.43	0.415	0.0282	0.021	0.297	0.05	0.119	9
	REQUIREMENT				0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	
OIL AND GREASE	ACTUAL	-	-	-	0.002	0.006	0.002	0.001	0.005	0.002	0.01	0.004	0.002	0.005	
	REQUIREMENT														
PENTACHLORO-PHENOL	ACTUAL	-	-	-	3.44	0.046	0.64	0.53	0.5	0.22	0.31	0.89	0.67	0.47	1
	REQUIREMENT				0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME Dupont Canada Ltd. (Kingston Works) INDUSTRIAL SECTOR: Organic Chemicals, Synthetic Fibres
& PLANT LOCATION: Kingston

RECEIVING WATERBODY: DIRECT: 0.9 Km to Lake Ontario INDIRECT:

DESCRIPTION OF ACTIVITY: Adipic acid and Hexamethlyenediamine react to form a synthetic-nylon.

EFFLUENT QUALITY: Contains soluble and insoluble organics such as phenols.

EFFLUENT TREATMENT: Partial settling.

DISCHARGE TYPE: Continuous

COMMENTS:

Total Organic Carbon analyzer out of service for the last 4 months of 1985.
In compliance.

IMIS NUMBER: 0000080101 SIC CODE: 183 MOE REGION: Southeast DISTRICT: Kingston

d0886

DUPONT CANADA INC - 0000080101
KINGSTON TWP

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		49392	49518	42184	48890	62826	84786	98426	113752	115794	104380	56640	49608	73016	
pH		7.5	7.5	7.2	7.8	7.8	7.7	7.6	7.9	7.9	7.8	8.1	8.1		
PHENOLS	ACTUAL	0	0	0	0	0	0	0	0.66	0.671	0.07	0.002	0	0.056	
	REQUIREMENT	1	1	0.8	1	1.3	1.7	2	2.3	2.32	2.1	1.13	1	1.46	
TOTAL ORGANIC CARBON	ACTUAL	716	455	262	892	810	1240	1370	1500	-	-	-	-	867	
	REQUIREMENT	980	990	844	978	1260	1700	1970	2280					1490	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME Eldorado Nuclear Ltd.
& PLANT LOCATION: Port Hope

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT: Lake Ontario INDIRECT:

DESCRIPTION OF ACTIVITY: Uranium oxide (UO3) is converted to uranium hexafluoride (UF6).

EFFLUENT QUALITY:

EFFLUENT TREATMENT:

DISCHARGE TYPE: Two discharge pipes at surface.

COMMENTS:

In compliance.
No flow measurements available - estimates only.
Control point 03-EUF6 cooling water discharge not reported in second half as plant was "moth-balled".
Reported is the concentration of specific parameters from control point 02.

IMIS NUMBER: 0000820001 SIC CODE: 295 MOE REGION: Central DISTRICT: Peterborough

d0886

ELDORADO NUCLEAR LTD - 0000820001
FORT HOPE

ALL VALUES IN MG/L
URANIUM IN MICROGRAMS/LITRE
RADIUM 226 UNITS IN BEQUERELS/LITRE

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		NO RECORDED FLOWS													
RADIUM 226	ACTUAL	NO LONGER REPORTED													
	REQUIREMENT	0.37													
FLUORIDE	ACTUAL	0.26	0.38	0.34	0.24	0.33	-	0.38	0.42	0.76	0.45	0.82	0.42	0.44	
	REQUIREMENT	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5	1.5	
AMMONIA NITROGEN	ACTUAL	0.32	0.1	0.26	0.15	0.1	0.1	0.1	0.19	0.14	0.13	0.12	0.1	0.15	
	REQUIREMENT	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
NITRATES AND NITRITES	ACTUAL	2	2	2.4	1.8	1.3	1.4	1.1	2.6	2	2.1	2.7	2.8	2	
	REQUIREMENT	25	25	25	25	25	25	25	25	25	25	25	25	25	
URANIUM	ACTUAL	-	0.13	0.08	0.05	0.03	0.03	0.04	0.09	0.04	0.02	0.05	0.06	0.06	
	REQUIREMENT		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME
& PLANT LOCATION: Eldorado Nuclear Ltd.
Port Granby

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT: Lake Ontario INDIRECT:

DESCRIPTION OF ACTIVITY: Leachate is collected and chemically treated.

EFFLUENT QUALITY: Chemical precipitation

EFFLUENT TREATMENT:

DISCHARGE TYPE: Batch Discharge

COMMENTS:

Arsenic not in compliance. pH not in compliance for March and May.
Decommissioning of the site plans are indefinite. Effluent quality limits are set in AECB operating licence. Arsenic concentration requirement is under review. Licence limits compliance point changed effective July 1, 1985 to Interceptor effluent.
Only Radium and Arsenic concentrations in licence limits - no loading criteria.
Other parameters are for treatment efficiency control only.

IMIS NUMBER: 0000820209 SIC CODE: 295 MOE REGION: Central DISTRICT: Peterborough

d0886

ELDORADO NUCLEAR LTD - 0000820203
PORT GRANBY

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY
RADIUM 226 UNITS IN BEQUERELS/LITRE

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		69	120	204	150	69	53	170	196	212	163	305	218	167	
pH		7.89	8.51	9.67	9.46	9.65	9.37	8.31	8.37	8.56	8.59	8.69	7.93		2
RADIUM 226	ACTUAL	0.06	0.12	0.09	0.1	0.13	0.08	0.05	0.05	0.06	0.05	0.05	0.05	0.074	
	REQUIREMENT	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	
ARSENIC	ACTUAL	0.09	0.21	0.17	0.14	0.08	0.09	0.09	0.14	0.15	0.09	0.23	0.09	0.127	6 - 4 *
	REQUIREMENT	0.04	0.06	0.1	0.08	0.03	0.03	0.09	0.1	0.11	0.08	0.19	0.11	0.085	
BARIUM	ACTUAL	0.12	0.82	1.04	0.45	0.46	0.63							0.587	
	REQUIREMENT													0.11	
SULPHATES	ACTUAL	18.8	30.6	25.1	23.3	12.2	11.6								
	REQUIREMENT														

NOTE: THE COMPLIANCE POINT WAS CHANGED, EFFECTIVE JULY 1, 1985.

* first half - second half

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Eldorado Nuclear Ltd.
Welcome Waste Site

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT: Lake Ontario

INDIRECT:

DESCRIPTION OF ACTIVITY: Leachate is collected and chemically treated

EFFLUENT QUALITY: Chemical precipitation

EFFLUENT TREATMENT:

DISCHARGE TYPE: continuous submerged

COMMENTS:

Arsenic not in compliance.
Decommissioning of the site is indefinite. Effluent quality limits are set in AECB operating licence.
Collection ponds to be re-constructed in 1986 to improve arsenic treatment.
Radium units are concentrations, not loadings.

IMIS NUMBER: 0000820100 SIC CODE: 295 MOE REGION: Central DISTRICT: Peterborough

d0886

ELDORADO NUCLEAR LTD - 0000820100
WELCOME

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY
RADIUM 226 UNITS IN BEQUERELS/LITRE

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		163	207	492	223	148	138	113	113	97	136	48	196	206	
pH		7.43	7.48	7.37	7.6	7.62	7.81	8.15	8.15	7.85	7.92	7.67	7.27		
RADIUM 226	ACTUAL	0.04	0.04	0.04	0.04	0.07	0.04	0.04	0.04	0.04	0.04	0.11	0.1	0.0533	
	REQUIREMENT	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	
ARSENIC	ACTUAL	0.16	0.21	0.38	0.16	0.11	0.08	0.09	0.18	0.16	0.18	0.04	0.07	0.15	11
	REQUIREMENT	0.08	0.1	0.25	0.11	0.07	0.07	0.06	0.05	0.07	0.06	0.02	0.1	0.09	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Exolon
& PLANT LOCATION: Thorold

INDUSTRIAL SECTOR: Industrial Minerals

RECEIVING WATERBODY: DIRECT : 9.7 km from Beaverdaus Pond to 12 Mile Creek

INDIRECT: Lake Ontario

DESCRIPTION OF ACTIVITY: Manufactures abrasive products

EFFLUENT QUALITY: Furnace cooling water.

EFFLUENT TREATMENT:

DISCHARGE TYPE: Continuous

COMMENTS:

Suspended Solids not in compliance.
Sampling and analytical methodology under review. Process water is furnace cooling water only.

IMIS NO.: 0001640002 SIC CODE: 357 MOE REGION: West Central DISTRICT: Welland

d0886

EXOLON - 0001640002

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		13090	13090	13090	13090	13090	13090	13090	13090	13090	13090	13090	13090	13090	
SUSPENDED SOLIDS	ACTUAL	49.8	65.5	0	0	864	0	26.2	340	327	0	3630	0	442	4
	REQUIREMENT	196	196	196	196	196	196	196	196	196	196	196	196	196	
OIL AND GREASE	ACTUAL	13.09	26.2	13.09	13.09	13.09	13.09	13.09	13.09	13.09	_	13.09	13.09	14.5	
	REQUIREMENT	196	196	196	196	196	196	196	196	196	196	196	196	196	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Fleet Manufacturing Company Ltd.
Gilmore
Fort Erie

INDUSTRIAL SECTOR: Metals, Plastic Fabricating and Finishing

RECEIVING WATERBODY: DIRECT: Frenchmans Creek to
Niagara River

INDIRECT:

DESCRIPTION OF ACTIVITY: Fabricator of aircraft parts

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Wastewater treatment consists of pH adjustment and heavy metal removal to sanitary sewer.

DISCHARGE TYPE: continuous

COMMENTS:

Company has connected process waste water to municipal sewer system.

IMIS NUMBER: 0001570001 SIC CODE: 321 MOE REGION: West Central DISTRICT: Welland

d0886

FLEET MFG CO. LTD. - 0001570001

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		966	966	966	966	966	966	966	966	966	966	1036	_	972	
CADMIUM TOTAL	ACTUAL	0.685	0.696	-	-	-	-	-	-	-	-	0.005	_	0.462	
	REQUIREMENT	0.97	0.97									1.03		0.98	
CHROMIUM TOTAL	ACTUAL	1.26	2.29	0.799	0.931	4.11	0.193	0.608	1.07	1.81	11.3	0.164	_	2.23	6
	REQUIREMENT	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	1.03		0.98	
LEAD TOTAL	ACTUAL	_	_	_	_	0.219	0.316	0.549	0.966	1.81	0.193	0.103	_	0.594	
	REQUIREMENT														
pH		8.2	_	_	_	_	_	_	_	_	7.1	7.27	_	7.52	
SUSPENDED SOLIDS	ACTUAL	13.02	13.3	6.07	32.9	11.1	6.09	4.72	32.3	10.9	15.07	4.36	_	13.6	3
	REQUIREMENT	14.49	14.49	14.49	14.49	14.49	14.49	14.49	14.49	14.5	14.5	15.5		14.6	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME Ford Motor Company INDUSTRIAL SECTOR: Industrial Minerals
& PLANT LOCATION: Niagara Falls

RECEIVING WATERBODY: DIRECT: Welland River to Niagara River
INDIRECT:

DESCRIPTION OF ACTIVITY: Manufacturing automotive glass.

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Conventional secondary sewage treatment plant and oil water separation.

DISCHARGE TYPE: continuous (treated sanitary and contact cooling water)

COMMENTS:

Effluent quality not in compliance with phosphorus loading. Suspended Solids not in compliance for January. Voluntary program commenced in 1986.

IMIS NUMBER: 0000020503 SIC CODE: 325 MOE REGION: West Central DISTRICT: Welland

d0886

FORD MOTOR CO. - 0000020503
NIAGARA FALLS

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		2728	2728	2728	2728	2728	2728	2728	2728	8550	8550	8550	8550	4670	
BIOCHEM. OXYGEN DEMAND	ACTUAL	16.9	7.4	15	3.3	6.3	4.9	5.7	2.5	10.8	24.8	87.2	34.2	18.9	
	REQUIREMENT	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	128	128	128	128	70	
pH		–	–	–	–	–	–	–	7.7	–	7.9	–	–		
IRON TOTAL	ACTUAL	0.85	59.8	3.11	0.65	–	2.3	3.3	–	0	–	–	–	10.57	
	REQUIREMENT														
AMMONIUM FILTERED	ACTUAL	4.1	11.5	–	52.6	–	1.3	1.9	0.55	0.64	1.07	0.36	0.55	7.46	
	REQUIREMENT														
SUSPENDED SOLIDS	ACTUAL	62.5	33.5	35.7	26.7	15.5	40.3	20.2	14.2	0	79.5	35.5	121	40.4	1
	REQUIREMENT	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	128	128	128	128	69.9	
PHOSPHORUS	ACTUAL	5.6	5.7	5.7	5.9	–	9.5	2.38	3.93	11.2	2.88	2.64	4.9	5.5	7
	REQUIREMENT	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
KJELDAHL NITROGEN	ACTUAL	12.3	18.8	–	57.3	–	4.4	6	2.6	9.4	11.12	2.4	4.3	12.86	
	REQUIREMENT														

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: FORD Motor Company
& PLANT LOCATION: Oakville

INDUSTRIAL SECTOR: Metal, Plasic Fabricating and Finishing

RECEIVING WATERBODY: DIRECT : Lake Ontario

INDIRECT:

DESCRIPTION OF ACTIVITY: Automobile and truck assembly plant

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Primary treatment with settling lagoon.

DISCHARGE TYPE: Continuous

COMMENTS:

BOD, Phenols (Sept.) and Suspended Solids not in compliance.
Company is negotiating with the region of Halton to discharge treated effluent to sanitary sewer. Ford has advised MOE that they are prepared to install a new BOD treatment plant.
A decision whether to buy Region of Halton treatment service or to include a biological section in their current building plans will be made before January 1987.

IMIS NO.: 0000020008

SIC CODE: 323

MOE REGION: Central

DISTRICT: Halton-Peel

d0886n2486

FORD MOTOR CO OF CANADA LTD - 0000020008
OAKVILLE

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		12800	12800	13300	14900	16100	15400	13800	17800	16000	13600	13500	10600	14200	
BIOCHEM. OXYGEN DEMAND	ACTUAL	448	320	264	414	547	513	125	427	396	312	414	775	413	11
	REQUIREMENT	192	192	200	223	242	231	207	267	240	204	203	159	213	
CHROMIUM TOTAL	ACTUAL	0.41	0.31	0.43	0.03	0.2	0.29	0.03	0.25	0.26	0.26	0.77	0.42	0.3	
	REQUIREMENT	12.8	12.8	13.3	14.9	15.4	15.4	13.8	17.8	16.1	13.6	13.5	10.6	11.9	
pH		7.9	7.8	7.7	7.8	7.8	7.6	7.6	7.5	7.8	7.9	7.5	7.8		
PHENOLS	ACTUAL	0.13	0.16	0.07	0.14	0.26	0.24	0.07	0.22	0.34	0.25	0.24	0.16	0.19	1
	REQUIREMENT	0.26	0.26	0.27	0.3	0.32	0.31	0.28	0.36	0.32	0.27	0.27	0.21	0.24	
PHOSPHORUS TOTAL	ACTUAL	2.1	3.5	1.1	1.6	2.9	0.8	6.3	6.4	4.3	6.3	5.8	6.8	3.99	
	REQUIREMENT	12.8	12.8	13.3	14.9	16.1	15.4	13.8	17.8	16.1	13.6	13.5	10.6	11.8	
SUSPENDED SOLIDS	ACTUAL	179	144	119	138	242	258	218	551	288	238	293	130	233	6
	REQUIREMENT	192	192	200	223	242	231	207	267	240	204	203	159	213	
OIL AND GREASE	ACTUAL	33.9	24.5	17.2	6.3	27.8	47.9	12.3	89.1	19.1	35.6	27	6.5	28.9	
	REQUIREMENT	192	192	200	223	242	231	207	267	240	204	203	159	213	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Fraser Inc. Thorold

INDUSTRIAL SECTOR: Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT: Twelve Mile Creek
INDIRECT: 12 km to Lake Ontario

DESCRIPTION OF ACTIVITY: Fine paper is made from pulp and from deinked ledger paper.

EFFLUENT QUALITY;

EFFLUENT TREATMENT:

DISCHARGE TYPE: continuous through an outfall

COMMENTS:

Effluent quality met Ministry Total Suspended Solids annual requirement, but exceeded one monthly (Jan.) limit. The effluent did not meet the Biochemical Oxygen Demand limit.

IMIS NUMBER: 0000940007 SIC CODE: 271 MOE REGION: West Central DISTRICT: Welland

d0886

FRASER INC. - 0000940007

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		24500	24500	24200	24900	25300	25900	25100	23900	22800	23300	25800	25500	24800	
BIOCHEM. OXYGEN DEMAND	ACTUAL	2500	2200	2500	2140	2200	1990	2000	2100	1700	2170	1800	1800	2091	9
	REQUIREMENT	1810	1810	1810	1810	1810	1810	1810	1810	1810	1810	1810	1810	1810	
SUSPENDED SOLIDS	ACTUAL	1600	1200	1100	650	560	860	1300	700	1300	900	1000	1000	1014	1
	REQUIREMENT	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	
DISSOLVED SOLIDS	ACTUAL	7600	8200	7500	8600	8590	9330	6000	7500	5200	4400	6600	6700	7190	
	REQUIREMENT	–	–	–	–	–	–	–	–	–	–	–	–	–	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME
& PLANT LOCATION: General Motors of Canada Ltd.
St. Catharines

INDUSTRIAL SECTOR: Metal, Plastic Fabricating and Finishing

RECEIVING WATERBODY: DIRECT: Welland Canal
INDIRECT: 9.2 km to Lake Ontario

DESCRIPTION OF ACTIVITY: Coke and iron (pigs and scrap) are charged to a cupola to be processed into iron and cast as engine parts.

EFFLUENT QUALITY:

EFFLUENT TREATMENT:

DISCHARGE TYPE: continuous for five days a week through an outfall

COMMENTS:

Phenols and Suspended Solids not in compliance.
A consultant has been hired to investigate sources of phenol and recommend abatement measures. Company analytical procedures are also being checked.

IMIS NUMBER: 0001630003 SIC CODE: 323 MOE REGION: West Central DISTRICT: Welland

d0886

GENERAL MOTORS OF CANADA LTD. - 0001630003

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		122000	-	-	-	130000	133000	138000	861000	129000	128000	125000	126000	210000	
BIOCHEM. OXYGEN DEMAND	ACTUAL	-	-	-	-	-	-	-	70.4	201	198	87	117	135	
	REQUIREMENT								12900	1940	1920	1880	1890	4106	
pH		7.5	-	-	-	7.8	7.8	7.8	-	-	-	-	-	7.7	
PHENOLS	ACTUAL	15.9	-	-	-	13.6	0	6.4	0	0	0	0	0	3.98	3
	REQUIREMENT	2.44				2.6	2.66	2.76	17.2	2.58	2.56	2.5	2.52	4.2	
PHOSPHORUS TOTAL	ACTUAL	-	-	-	-	-	-	-	0	0	0	0	0	0	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
DISSOLVED SOLIDS	ACTUAL	3370	-	-	-	2340	2400	2910	1720	3580	2750	938	1970	2440	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
SUSPENDED SOLIDS	ACTUAL	3270	-	-	-	0	1200	770	2020	1490	4060	1910	1720	1830	3
	REQUIREMENT	1830				1950	2000	2070	12900	1940	1920	1880	1890	1960	
OIL AND GREASE	ACTUAL	0	-	-	-	22.4	0	0	0	0	0	150	92.4	29.4	
	REQUIREMENT	-	-	-	-	1950	2000	2070	12900	1940	1920	1880	1890	1860	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: GNB Batteries Canada Inc.
Gould Manufacturing of Canada Ltd.
Fort Erie

INDUSTRIAL SECTOR: Metal, Plastic Fabricating and Finishing

RECEIVING WATERBODY: DIRECT: Frenchman's Creek to Niagara River

INDIRECT:

DESCRIPTION OF ACTIVITY: Lead is melted and cast into batteries.

EFFLUENT QUALITY: Tertiary treatment with heavy metal removal and pH adjustment.

EFFLUENT TREATMENT:

DISCHARGE TYPE: continuous for five days through an open outfall

COMMENTS:

Not in compliance for lead, suspended solids and pH.
All process waste water to be discharged to municipal sewer in 1986.

IMIS NUMBER: 0001580000 SIC CODE: 3391 MOE REGION: West Central DISTRICT: Welland

d0886

GNB BATTERIES CANADA INC - 0001580000

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		118	118	118	118	118	118	118	118	118	118	118	118	118	
LEAD filtered	ACTUAL REQUIREMENT	0.035	0.035	0.035	0.127	0.062	0.086	0.024	0.024	0.036	0.036	0.036	0.036	0.05	
LEAD TOTAL unfiltered	ACTUAL REQUIREMENT	0.212 0.118	0.322 0.118	0.13 0.118	0.23 0.118	0.204 0.118	0.289 0.118	0.757 0.118	0.15 0.118	0.26 0.118	0.22 0.118	0.32 0.118	0.23 0.118	0.277 0.118	12
pH		8	7.12	11.1	5.61	7.82	6.82	10.6	-	-	-	-	-		2
SUSPENDED SOLIDS	ACTUAL REQUIREMENT	-	-	-	-	-	-	-	-	3.25 1.77	5.37 1.77	3.46 1.77	6.34 1.77	4.61 1.77	4

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Kimberly Clark of Canada Ltd. St. Catharines

INDUSTRIAL SECTOR: Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT: Old Welland Canal to Twelve Mile Creek
INDIRECT: 10.0 km to Lake Ontario

DESCRIPTION OF ACTIVITY: Pulp and clean waste paper is made into tissue.

EFFLUENT QUALITY:

EFFLUENT TREATMENT:

DISCHARGE TYPE: continuous through an open outfall

COMMENTS:

Not in compliance.
Effluent quality meets Ministry quidelines for Suspended Solids but exceeded the BOD limits.

IMIS NUMBER: 0000830208 SIC CODE: 271 MOE REGION: West Central DISTRICT: Welland

d0886

KIMBERLY CLARK OF CANADA LTD - 0000830208

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		8920	8800	9150	8280	7980	9590	9860	11130	9270	9860	9560	8530	9240	
BIOCHEM. OXYGEN DEMAND	ACTUAL	450	380	310	240	380	360	440	560	460	410	560	500	430	9
	REQUIREMENT	362	362	362	362	362	362	362	362	362	362	362	362	362	
DISSOLVED SOLIDS	ACTUAL	760	730	20	390	700	650	650	770	810	660	850	890	660	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
SUSPENDED SOLIDS	ACTUAL	60	30	40	50	30	50	60	60	50	60	100	100	58	
	REQUIREMENT	362	362	362	362	362	362	362	362	362	362	362	362	362	

WASTEWATER DISCHARGE SUMMARY
1985

INDUSTRIAL SECTOR: Industrial Minerals

COMPANY NAME Norton Company
& PLANT LOCATION: Niagara Falls

RECEIVING WATERBODY: DIRECT: Welland River to Niagara River
INDIRECT:

DESCRIPTION OF PROCESS: Abrasive oxides are manufactured in electric arc furnaces.

EFFLUENT QUALITY: There are 4 discharges to the Welland River; results are composite. of all discharges.

EFFLUENT TRATMENT: Oil water separation, pH adjustment and solids precipitation on product process waste water are carried out.

DISCHARGE TYPE: continuous through a submerged outfall

COMMENTS:

Company is in compliance with annual loading requirements, but not with all monthly requirements.
Company not a significant source of BOD and phosphorus.

IMIS NUMBER: 0001650001 SIC CODE: 357 MOE REGION: West Central DISTRICT: Welland

d0886

NORTON COMPANY - 0001650001

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		8502	8502	8502	8502	8502	13730	11780	11780	_	11510	8180	13750	10295	
pH		8.1	6.2	6.3	7.1	7.3	7	6.7	6.4	_	6.6	6.6	5.4		1
SUSPENDED SOLIDS	ACTUAL	335	166	229	143	99.7	0	55.9	7.52	_	379	76.5	58.9	141	5
	REQUIREMENT	128	128	128	128	128	206	176.7	176.7		178	123	206	142	
OIL AND GREASE	ACTUAL	8.5	8.5	29.8	8.5	8.5	13.7	11.8	11.8	_	11.5	8.1	13.7	12.2	
	REQUIREMENT	128	128	128	128	128	206	176.7	176.7	_	178	123	206	155	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Ontario Hydro Lakeview TGS
& PLANT LOCATION: Toronto

INDUSTRIAL SECTOR: Electrical Power Generation

RECEIVING WATERBODY: DIRECT : Lake Ontario

INDIRECT:

DESCRIPTION OF ACTIVITY:

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Settling lagoon.

DISCHARGE TYPE: Continuous

COMMENTS:

In compliance.

IMIS NO.:

SIC CODE: 527

MOE REGION: Central

DISTRICT: TorontoPeel

d0886

ONTARIO HYDRO
LAKEVIEW TGS

ALL LOADS IN KG/DAY
ALL FLOWS IN MILLION CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	% OF OPERATING HOURS EXCEEDED
FLOW		89.4	62.6	97.2	97.2	100	77.1	40.7	31.4	45.8	58.5	56.2	97.7	71.1	
TEMPERATUTRE RISE	ACTUAL	10	11	11	10.3	10	9	8.3	8	9.3	11	9	9.4	9.77	0
	GUIDELINE	11	11	11	11	11	11	11	11	11	11	11	11	11	
MAX. EFFLUENT TEMPERATURE	ACTUAL	13.3	13.3	15.5	15	19	18	20	28	28	22	18	15.8	18.83	0
	GUIDELINE	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Petro Canada Products Ltd.
& PLANT LOCATION: Oakville

INDUSTRIAL SECTOR: Petroleum Refinery

RECEIVING WATERBODY: DIRECT : Lake Ontario

INDIRECT:

DESCRIPTION OF ACTIVITY:

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Activated sludge.

DISCHARGE TYPE: Continuous

COMMENTS:

Not in compliance.
Improvements to effluent treatment plant were completed in 1984. Plant has been assessed by regional staff. The study shows that further improvements are required to reduce levels. The company will be requested to submit a program in early 1987 outlining remedial measures to improve effluent discharge to Lake Ontario.

IMIS NO.: 0000530006

SIC CODE: 365

MOE REGION: Central

DISTRICT: Halton-Peel

d0886

PETRO-CANADA PRODUCTS INC - 0000530006
OAKVILLE

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		3900	4640	4680	4340	4680	4680	5230	4050	4590	4800	5570	5290	4710	
AMMONIA NITROGEN	ACTUAL	39.9	29.4	25.1	49.2	62.2	48.5	50.2	28.1	31.2	40	82.2	106.1	49.3	6
	REQUIREMENT	39	46.4	46.8	43.4	46.8	46.8	52.3	40.5	45.9	48	55.7	52.9	47.1	
pH		0	0	0	0	0	0	0	0	0	0	0	0		
PHENOLS	ACTUAL	0.05	0.19	0.24	0.13	0.1	0.11	0.11	0.08	0.1	0.14	0.19	0.72	0.18	10
	REQUIREMENT	0.078	0.093	0.094	0.087	0.094	0.094	0.105	0.081	0.092	0.096	0.111	0.106	0.094	
SUSPENDED SOLIDS	ACTUAL	27.7	41.5	43.4	68.2	99	111	108	65.7	76.1	84.5	66.7	70.51	71.8	7
	REQUIREMENT	58.5	69.6	70.2	65.1	70.2	70.2	78.5	60.7	68.9	72	83.6	79.4	70.7	
OIL AND GREASE	ACTUAL	3.1	12.3	5.3	3.5	3.8	3.5	4.9	3.5	4.4	4.2	4.7	10.1	5.3	
	REQUIREMENT	39	46.4	46.8	43.4	46.8	46.8	52.3	40.5	45.9	48	55.7	52.9	47.1	
SULPHIDES	ACTUAL	2.2	2.54	2.7	2.5	2.7	2.8	3.3	2.7	2.7	2.8	3.3	3.6	2.82	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Petro Canada Products Ltd.
& PLANT LOCATION: Mississauga

INDUSTRIAL SECTOR: Petroleum Refinery

RECEIVING WATERBODY: DIRECT : Lake Ontario

INDIRECT:

DESCRIPTION OF ACTIVITY:

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Activated sludge.

DISCHARGE TYPE: Continuous

COMMENTS:

Not in compliance.
Problems were encountered during August through November resulting in storm water effluent being discharged directly to the lake.

IMIS NO.: 0000130104 SIC CODE: 365 MOE REGION: Central DISTRICT: Halton-Peel

d0886n2486

PETRO-CANADA PRODUCTS - 0000130104

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY
(FLOWS ARE FOR PROCESS EFFLUENT ONLY
AND DOES NOT INCLUDE ONCE THROUGH COOLING WATER)

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		16700	17700	19300	10600	9920	11300	10800	11900	11900	13100	14200	11500	13200	
AMMONIA NITROGEN	ACTUAL	17.8	22.3	45	37.1	40.4	24	29.1	7	4.7	82.2	8.2	15	27.7	
	REQUIREMENT	167	177	193	106	99.2	113	108	119	119	131	142	115	129.6	
PHENOLS	ACTUAL	1.72	1.05	0.47	0.15	0.14	0.12	0.13	0.09	0.29	0.96	0.51	0.08	1.14	6
	REQUIREMENT	0.33	0.35	0.37	0.22	0.2	0.23	0.22	0.24	0.24	0.26	0.28	0.23	0.26	
SUSPENDED SOLIDS	ACTUAL	139	231	146	118	320	231	151	195	110	248	102	94	174	4
	REQUIREMENT	251	266	290	158	190	170	162	179	179	197	213	173	194	
OIL AND GREASE	ACTUAL	100	236	151	74.2	115	119	100	64.3	61.6	248	57.9	28.7	113	4
	REQUIREMENT	167	177	193	106	99.2	113	108	119	119	131	142	115	133	
SULPHIDES	ACTUAL	0.6	0.9	0.3	0.4	1.8	0.7	0.3	0.8	0.5	0.5	0.3	0.3	0.6	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	

WASTEWATER DISCHARGE SUMMARY
1985

INDUSTRIAL SECTOR: Industrial Minerals

COMPANY NAME & PLANT LOCATION: Sohio
(formerly Canadian Carborundum)
Niagara Falls

RECEIVING WATERBODY: DIRECT: Welland River to Niagara River
INDIRECT:

DESCRIPTION OF ACTIVITY: Abrasive oxides are manufactured in electric arc furnaces.

EFFLUENT QUALITY: There are two discharges, both to Welland River; results are composites of all discharges.

EFFLUENT TREATMENT: Process wastewater treatment consists of oil-water separation.

DISCHARGE TYPE: continuous through an outfall

COMMENTS:

Effluent quality met Ministry guidelines for Oil and Grease but exceeded the monthly averages for Suspended Solids. The annual average for Suspended Solids was below the limit.

IMIS NUMBER: 0001660000 SIC CODE: 357 MOE REGION: West Central DISTRICT: Welland

d0886

SOHIO - 0001660000

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		19600	2946	19600	19600	19600	22200	29750	29500	29500	29500	29500	29500	23400	
SUSPENDED SOLIDS	ACTUAL	423	82.5	161	6.48	0	130	64.1	139	348	2.5	0	583	153	3
	REQUIREMENT	294	44.2	294	294	294	333	446	443	443	443	443	443	351	
OIL AND GREASE	ACTUAL	75.8	23.3	8.94	30	0	10.2	4	17.2	28.4	0	0	49.6	23.2	
	REQUIREMENT	294	44.2	294	294	294	333	446	443	443	443	443	443	351	

WASTEWATER DISCHARGE SUMMARY
1985

INDUSTRIAL SECTOR: Iron and Steel

COMPANY NAME & PLANT LOCATION: Stelco Inc.
Hilton Works
Hamilton

RECEIVING WATERBODY: DIRECT: Hamilton Harbour
INDIRECT: Lake Ontario

DESCRIPTION OF ACTIVITY: All phases of iron and steel production including coke making, ironmaking, steelmaking and rolling.

EFFLUENT QUALITY: Contains heavy metals and light organics.

EFFLUENT TREATMENT: Recycle, clarification, filtration, oil recovery and ion exchange.

DISCHARGE TYPE: continuous through five shore outfalls

COMMENTS:

Iron, Phenols and Suspended Solids not in compliance.
Control Order requirement for phenol control.
Iron limit is set at 10 mg/L.
Since phosphorus and biochemical oxygen demand are consistently 98% below target loads, these pollutants are not being reported.
Effluent quality requirements for six of the eight pollutants were met (based on monthly averages).
Target loads are set by MOE industrial effluent concentration guidelines.

IMIS NUMBER: 0000950006 SIC CODE: 291 MOE REGION: West Central DISTRICT: Hamilton

d0886

STELCO INC - 0000350006
HAMILTON

ALL LOADS IN KG/DAY
ALL FLOWS IN 1000 CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		1055	1028	982	1012	974	1012	1060	1060	1080	1130	1075	1080	1050	
CYANIDE	ACTUAL	30.27	28.6	125	87.1	0*	35.3	34.1	18.1	149	77.1	0*	39.5	52	
	REQUIREMENT	212	206	196	202	195	202	212	212	216	226	215	216	210	
CHEMICAL OXYGEN DEMAND	ACTUAL	15700	5330	40000	16600	2640	6070	7800	4230	13300	3470	12300	12200	11600	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
IRON TOTAL	ACTUAL	3200	4650	11200	3210	898	743	487	582	399	1400	3050	3190	2750	1
	REQUIREMENT	10550	10550	10550	10550	10550	10550	10550	10550	10550	10550	10550	10550	10550	
AMMONIA NITROGEN	ACTUAL	85.8	0*	238	0*	0*	0*	27.3	276	668	1420	456	267	156	
	REQUIREMENT														
pH		7.33	6.98	7.11	7.27	7.82	7.41	7.52	7.6	6.9	7.24	7.37	7.22		
PHENOLS	ACTUAL	14.69	8.73	32.8	25.6	23.1	7.26	16.9	14	79	76.5	46.7	31.8	31.4	7
	REQUIREMENT	21.8	20.64	19.6	20.28	19.6	20.24	21.3	21.3	21.8	22.7	21.5	21.6	21	
SUSPENDED SOLIDS	ACTUAL	11300	13200	62500	11100	5970	6140	13000	7960	7940	13400	12900	20200	15500	2
	REQUIREMENT	15900	15400	14700	15200	14600	15200	15900	15900	16200	17000	16100	16200	15800	
OIL AND GREASE	ACTUAL	3230	2420	6800	4930	1160	1380	171	1210	0*	2190	2970	338	2170	
	REQUIREMENT	15900	15400	14700	15200	14600	15200	15900	15900	16200	17000	16100	16200	15800	
ZINC TOTAL	ACTUAL	156	165	117	168	54.2	22.3	6.19	10.3	24.8	93.2	13	35.7	72.1	
	REQUIREMENT	1055	1028	982	1012	974	1012	1060	1060	1080	1130	1075	1080	1050	

* INTAKE EXCEEDED DISCHARGE

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Stelco Page Hersey Works
Welland

INDUSTRIAL SECTOR: Iron and Steel

RECEIVING WATERBODY: DIRECT: Welland Canal

INDIRECT:

DESCRIPTION OF ACTIVITY: Small diameter seamless pipe is made from steel billets.

EFFLUENT QUALITY:

EFFLUENT TREATMENT:

DISCHARGE TYPE: continuous through a diffuser

COMMENTS:

In compliance.

IMIS NUMBER: 0000950303 SIC CODE: 292 MOE REGION: West Central DISTRICT: Welland

d0886

STELCO PAGE HERSEY - 0000950303

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		-	-	-	-	12080	12600	12900	13300	13500	14500	11600	9830	12540	
pH		8.17	8.14	8.18	8.11	8.1	8.18	8.07	8.2	8.19	8.16	7.96	8.14		
IRON TOTAL	ACTUAL	-	-	-	-	3.62	2.52	2.58	3.6	5.38	5.8	5.8	6.87	4.52	
	REQUIREMENT					12.1	12.6	12.9	13.3	13.5	14.5	11.6	9.83	12.5	
SUSPENDED SOLIDS	ACTUAL	-	-	-	-	26.6	26.5	23.2	41.3	31.05	47.8	31.3	30.5	32.3	
	REQUIREMENT					181	189	194	200	203	218	174	147	188	
OIL AND GREASE	ACTUAL	-	-	-	-	13.3	21.4	12.9	35.9	41.7	40.5	22.04	9.83	24.7	
	REQUIREMENT	-	-	-	-	181	189	194	200	203	218	174	147	188	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Stelco Welland Tube Works
Welland

INDUSTRIAL SECTOR: Iron and Steel

RECEIVING WATERBODY: DIRECT: Lyons Creek to Welland River to Niagara River

INDIRECT:

DESCRIPTION OF ACTIVITY: Flat steel is made into very large diameter pipe.

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Oil water separation.

DISCHARGE TYPE: continuous through an open outfall

COMMENTS:

In compliance except for Iron in March.

IMIS NUMBER: 0000950204 SIC CODE: 292 MOE REGION: West Central DISTRICT: Welland

d0886

STELCO WELLAND TUBES - 0000950204

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		678	1280	1430	1320	847	956	1260	1000	1440	1150	754	1630	1140	
pH		–	–	8.13	8.2	6.54	6.95	6.95	7.49	7.58	7.62	7.86	7.51		
IRON TOTAL	ACTUAL	–	–	1	0.4	0.34	0.38	0.25	0.5	0.29	0.69	0.151	0.981	0.5	1
	REQUIREMENT			0.87	0.92	0.85	0.96	1.26	1	1.44	1.15	0.75	1.63	1.08	
SUSPENDED SOLIDS	ACTUAL	–	–	10	1.58	10	4.6	8	12.4	11.6	3.6	1.66	3.75	6.72	
	REQUIREMENT			13.1	13.8	12.7	14.3	18.9	15	21.6	17.3	11.3	24.5	16.3	
OIL AND GREASE	ACTUAL	–	–	2.14	5.01	3.64	0.96	2	4.2	4.5	3.6	2.64	1.96	3.07	
	REQUIREMENT	–	–	13.1	13.8	12.7	14.3	18.9	15	21.6	17.3	11.3	24.5	16.3	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Strathcona Paper Company, Camden East Twp.

INDUSTRIAL SECTOR: Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT: Napanee River

INDIRECT: Lake Ontario (Bay of Quinte)

DESCRIPTION OF ACTIVITY: Wastepaper is repulped to form a paperboard.

EFFLUENT QUALITY:

EFFLENT TREATMENT: Aerated and facultative lagoon. Commercial bacteria added to enhance treatment.

DISCHARGE TYPE: Continuous

COMMENTS:

New flow monitoring installation to be installed in 1987.
Note 1 - Permissible BOD5 loadings are a function of Napanee River flows. Permitted loadings are detailed on Certificate of Approval #4-021-80-005 dated September 4, 1980.

IMIS NUMBER: 0001740000 SIC CODE: 271 MOE REGION: Southeast DISTRICT: Kingston

d0886

STRATHCONA PAPER CO. - 0001740000

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		0	-	-	-	-	-	-	-	-	-	-	-	0	
BIOCHEM. OXYGEN DEMAND	ACTUAL	394	-	609	446	71	164	82	131	241	341	253	618	305	
	REQUIREMENT														
SUSPENDED SOLIDS	ACTUAL	135	-	72	82	82	147	108	118	153	186	219	150	132	
	REQUIREMENT														

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Texaco Canada Ltd
& PLANT LOCATION: Port Credit

INDUSTRIAL SECTOR: Petroleum Refinery

RECEIVING WATERBODY: DIRECT : Lake Ontario

INDIRECT:

DESCRIPTION OF ACTIVITY:

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Primary (API separator and settling pond).

DISCHARGE TYPE: Continuous

COMMENTS:

Phenols and Suspended Solids not in compliance.
Decommissioning of refinery has resulted in batch discharges of high strength wastes to the treatment plant. Flushing of pipelines and process equipment should be completed in early 1987.

IMIS NO.: 0000520106

SIC CODE: 365

MOE REGION: Central

DISTRICT: Halton-Peel

d0886

TEXACO CANADA INC - 0000520106
MISSISSAUGA

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		6810	6810	6810	6810	6810	6810	6810	6810	6810	6810	6810	6810	6810	
CHEMICAL OXYGEN DEMAND	ACTUAL	57.8	44.9	225	61.3	64.7	52.1	57.9	91.9	64.7	17.03	74.9	13.6	68.8	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
AMMONIA NITROGEN	ACTUAL	0	0	0	0	0	0	0	0	0	0	0	0	0	
	REQUIREMENT	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	
PHENOLS	ACTUAL	0.14	0.23	0.4	0.068	0.54	0.19	0.04	0.12	0.102	0.014	0.12	0.05	0.168	5
	REQUIREMENT	0.136	0.136	0.136	0.136	0.136	0.136	0.136	0.136	0.136	0.136	0.136	0.136	0.136	
SUSPENDED SOLIDS	ACTUAL	109	162	-	105	68.1	95.3	81	174	78.3	30.7	34.1	57.9	90.5	4
	REQUIREMENT	102	102		102	102	102	102	102	102	102	102	102	102	
OIL AND GREASE	ACTUAL	10.23	17.1	6.8	6.8	13.6	6.8	6.8	10.2	6.8	44.3	6.8	10.2	12.2	
	REQUIREMENT	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	
SULPHIDES	ACTUAL	0	0	0	0	0	0	0	0	0	0	0	0	0	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	

WASTEWATER DISCHARGE SUMMARY
1985

INDUSTRIAL SECTOR: Pulp and Paper Mill

COMPANY NAME & PLANT LOCATION: The Ontario Paper Company Ltd.
Allanburg
Thorold

RECEIVING WATERBODY: DIRECT: Twelve Mile Creek
INDIRECT: 12.4 km to Lake Ontario

DESCRIPTION OF ACTIVITY: Newsprint is made from pulp from logs by three pulping processes (sulphite, thermal-mechanical and chemi-mechanical) and from deinked newspaper pulp.

EFFLUENT QUALITY:

EFFLUENT TREATMENT:

DISCHARGE TYPE: continuous into a buried part of the Old Welland Canal

COMMENTS:

In compliance.
Effluent quality meets Ministry guidelines.
The final effluent was sampled once during 1985 and tested by an aerated 96-hr. rainbow trout bioassay. The sample was found to have been non-lethal. Effluent toxicity complies with Federal Fisheries Act regulations, more than 50% of fish survived in undiluted effluent.

IMIS NUMBER: 0000930008 SIC CODE: 271 MOE REGION: West Central DISTRICT: Welland

d0886

THE ONTARIO PAPER CO. LTD - 0000930008

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		106100	105100	107100	114300	115000	115000	122800	130500	125500	125500	111500	102800	115100	
BIOCHEM. OXYGEN DEMAND	ACTUAL	14300	10700	12600	14100	13400	13600	13000	12000	13300	12300	10700	13800	12800	
	REQUIREMENT	18140	18140	18140	18140	18140	18140	18140	18140	18140	18140	18140	18140	18140	
DISSOLVED SOLIDS	ACTUAL	66400	56400	54600	54500	55900	79700	51600	58000	60900	50500	43600	63800	58000	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
SUSPENDED SOLIDS	ACTUAL	5900	6700	4200	5600	5700	6000	5900	5300	5200	5100	3300	3800	5230	
	REQUIREMENT	6800	6800	6800	6800	6800	6800	6800	6800	6800	6800	6800	6800	6800	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Trent Valley Paperboard Mills
Trenton

INDUSTRIAL SECTOR: Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT: Trent River   INDIRECT: Lake Ontario (Bay of Quinte)

DESCRIPTION OF ACTIVITY: Wastepaper is repulped to form a paperboard.

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Majority of effluent receives clarification prior to discharge.

DISCHARGE TYPE: Intermittent

COMMENTS:

Not in compliance.
Suspended solids effluent objectives of 140 kg/day as set out in Certificate of Approval presently under review. BOD requirement also being developed on basis of receiving water effluent impact.

IMIS NUMBER: 0001750009   **SIC CODE:** 271   **MOE REGION:** Southeast   **DISTRICT:** Kingston

d0886

TRENT VALLEY PAPERBOARD MILLS - 0001750009

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		2570	2078	2506	3054	3340	3220	2810	1610	6820	7100	2170	2290	2250	
BIOCHEM. OXYGEN DEMAND ‡	ACTUAL	–	–	–	–	–	2730	1918	1573	596	728	2634	2627	1830	7
	REQUIREMENT						161	141	81	341	355	109	115	113	
SUSPENDED SOLIDS	ACTUAL	815	644	800	864	1790	1350	1260	729	3170	2500	560	568	828	12
	REQUIREMENT	140	140	140	140	140	140	140	140	140	140	140	140	140	
DISSOLVED SOLIDS	ACTUAL	1870	2190	2440	3700	3080	3160	3020	1600	575	577	2670	2170	2250	
	REQUIREMENT														

‡ Based on assumed BOD objective of 50 mg/L

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Washington Mills Ltd.
& PLANT LOCATION: Niagara Falls

INDUSTRIAL SECTOR: Industrial Minerals

RECEIVING WATERBODY: DIRECT : Welland R.

INDIRECT: 11 km to Lake Ontario

DESCRIPTION OF ACTIVITY: Abrasive oxides are manufactured in electric arc furnaces.

EFFLUENT QUALITY: Contains dissolved organic compounds and organic processing compounds

EFFLUENT TREATMENT: Oil water separation.

DISCHARGE TYPE: Continuous

COMMENTS:

Suspended Solids not in compliance for May, July, August and October. Suspended Solids in compliance on annual averages.

IMIS NO.: 0001950005   SIC CODE: 357   MOE REGION: West Central   DISTRICT: Welland

d1586

WASHINGTON MILLS LTD. - 0001950005

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
SUSPENDED SOLIDS	ACTUAL	0.247	6.66	3.8	9.51	29.5	21.9	51.3	63.7	23.8	29.5	17.1	19	23	4
	REQUIREMENT	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	
OIL AND GREASE	ACTUAL	0.19	0.19	0.19	0.19	0.19	0.19	0	0.19	0.19	0	0	0	0.127	
	REQUIREMENT	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: BCL (formerly TCF)
Cornwall

INDUSTRIAL SECTOR: Organic Chemicals, Synthetic Fibres

RECEIVING WATERBODY: DIRECT: St. Lawrence River INDIRECT:

DESCRIPTION OF ACTIVITY: Viscose supplied by Courtaulds is made into cellulose film.

EFFLUENT QUALITY:

EFFLUENT TREATMENT: No external effluent treatment.

DISCHARGE TYPE: continuous through a submerged diffuser shared with Courtaulds

COMMENTS:

Control Order which will require improvements in the effluent discharged is nearly completed.
Total Acidity and BOD not in compliance.

IMIS NUMBER: SIC CODE: 183 MOE REGION: Southeast DISTRICT: Cornwall

d0886

BCL
CORNWALL

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		3350	3110	3060	3180	4060	4310	4540	5560	5820	4640	3920	3540	4090	
TOTAL ACIDITY	ACTUAL	7000	5000	5900	4900	3800	4600	4700	6100	7200	6400	6900	6700	5770	7
	REQUIREMENT	5200	4600	4700	5100	4900	5100	5500	6100	6000	5500	5900	5400	5330	
BIOCHEM. OXYGEN DEMAND	ACTUAL	830	660	760	560	730	750	670	1280	1860	1320	1110	1150	973	5
	REQUIREMENT	870	770	790	850	820	850	910	1010	1000	920	980	900	889	
SUSPENDED SOLIDS	ACTUAL	-	-	23	74	120	93	146	-	103	39	30	19	53.9	
	REQUIREMENT	870	770	790	850	820	850	910	1010	1000	920	980	900	753	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME Canadian Industries Ltd. INDUSTRIAL SECTOR: Inorganic Chemicals

& PLANT LOCATION: Cornwall

RECEIVING WATERBODY: DIRECT: St. Lawrence River INDIRECT:

DESCRIPTION OF ACTIVITY: The mercury cell process is used to produce caustic and chlorine gas from salt

EFFLUENT QUALITY: All mercury-contaminated streams are collected and treated to remove mercury before discharge.

EFFLUENT TREATMENT:

DISCHARGE TYPE: Continuous through a submerged diffuser shared with Domtar.

COMMENTS:

In compliance.
Meets Federal Fisheries Act regulations governing the amount of mercury discharged from chloro-alkali plants.

IMIS NUMBER: 0000390401 SIC CODE: 3782 MOE REGION: Southeast DISTRICT: Cornwall

d0886

CIL INC - 0000390401
CORNWALL

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		3076	3170	3170	3190	2670	3450	3340	3630	3580	2780	3078	2607	3140	
MERCURY TOTAL	ACTUAL	0.0294	0.0359	0.0328	0.0519	0.0641	0.0602	0.0505	0.0471	0.045	0.0316	0.0267	0.0351	0.0425	
	REQUIREMENT	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Courtaulds Canada Ltd.
Cornwall

INDUSTRIAL SECTOR: Organic Chemicals, Synthetic Fibres

RECEIVING WATERBODY: DIRECT: St. Lawrence River INDIRECT:

DESCRIPTION OF ACTIVITY: Dissolving sulphite pulp is reacted to form rayon

EFFLUENT QUALITY:

EFFLUENT TREATMENT: No external effluent treatment.

DISCHARGE TYPE: continuous through a diffuser shared with BCL

COMMENTS:

Out of compliance for BOD for existing requirements based on an expired Control Order. Revised requirements will be set when new Control Order (near completion) is served. Three final sewers (sulphide, acid and viscose) were sampled during 1985 and tested by aerated 96-hr. rainbow trout bioassays. The LC50's were 0.5, 2.2 and 28.3% respectively. BOD and Suspended Solids not in compliance.

IMIS NUMBER: 0001900000 SIC CODE: 183 MOE REGION: Southeast DISTRICT: Cornwall

d0886

COURTAULDS - 0001900000
CORNWALL

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		5610	5490	6510	6080	4700	4470	4740	3980	4580	5020	5700	5730	5220	
TOTAL ACIDITY	ACTUAL	7200	5000	5900	4900	3800	4600	4700	6200	7200	6300	6900	6700	5760	
	REQUIREMENT	9300	9300	9300	9300	9300	9300	9300	9300	9300	9300	9300	9300	9300	
BIOCHEM. OXYGEN DEMAND	ACTUAL	1740	1270	1700	1730	1030	1160	1010	1670	1230	1060	1430	2200	1440	12
	REQUIREMENT	840	840	840	840	840	840	840	840	840	840	840	840	840	
CHEMICAL OXYGEN DEMAND ‡	ACTUAL	4230	3320	3780	3600	2740	2820	2900	4510	4210	3750	4030	4450	3700	
	REQUIREMENT														
SUSPENDED SOLIDS	ACTUAL	200	300	280	340	250	280	350	480	380	370	430	490	346	12
	REQUIREMENT	625	625	625	625	625	625	625	625	625	625	625	625	625	

‡ Includes some from HCL

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME Domtar Fine Papers
& PLANT LOCATION: CORNWALL

INDUSTRIAL SECTOR: Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT: St. Lawrence River INDIRECT:

DESCRIPTION OF ACTIVITY: Fine paper is made from logs and chips by the kraft pulping process and from purchased pulp.

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Primary

DISCHARGE TYPE: Continuous through a submerged diffuser

COMMENTS:

A production-based total suspended solids limit was to become effective June 30, 1987. The company has asked for an eighteen month extension. This request must receive favourable review at a public meeting before an extension is granted.

IMIS NUMBER: 0000140301 SIC CODE: 271 MOE REGION: Southeast DISTRICT: Cornwall

d0886

DOMTAR FINE PAPERS - 0000140301
CORNWALL

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		125000	121000	123000	122000	127000	129000	102100	106300	105900	104400	102000	93800	113000	
BIOCHEM. OXYGEN DEMAND	ACTUAL	20700	20700	18500	21300	19800	17300	14500	15900	15000	12100	15600	13500	17100	
	REQUIRED	27700	27700	27700	27700	27700	27700	27700	27700	27700	27700	27700	27700	27700	
DISSOLVED SOLIDS	ACTUAL	132000	130000	130000	133000	132000	121000	100000	109000	108000	97900	103000	96600	116000	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
SUSPENDED SOLIDS	ACTUAL	6400	9100	11100	11900	11100	10600	6700	7800	9200	8900	10500	9900	9430	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Dupont Canada Inc. Maitland

INDUSTRIAL SECTOR: Organic Chemicals, Synthetic Fibres

RECEIVING WATERBODY: DIRECT: St. Lawrence River . INDIRECT:

DESCRIPTION OF ACTIVITY: Tetra-ethyl lead is made from a lead-sodium alloy and ethyl chloride.

EFFLUENT QUALITY: Contains elemental and alkyl lead.

EFFLUENT TREATMENT: Settling

DISCHARGE TYPE: Continuous

COMMENTS:

Not in compliance.
Plant closed down June 30, 1985. Decommissioning continued until February 1986.
Operated a total of 60 days after June 30, 1985.
Control point 0100 is no longer a monitoring station since blocked off as of May 1, 1986.

IMIS NUMBER: 0000080002 SIC CODE: 3783 MOE REGION: Southeast DISTRICT: Kingston

d0886

DUPONT CANADA INC - 0000080002
MAITLAND

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
CNTL PT 0100															
FLOW		8100	7600	8600	7200	9730	10200	7000	11300	9000	11400	5100	4200	8300	
LEAD TOTAL	ACTUAL	14.8	15.5	17.8	15.3	19.2	20.8	10.5	16.4	16.3	13	3.6	6	14.1	11
	REQUIREMENT	8.1	7.6	8.6	7.2	9.73	10.2	7	11.3	9	11.4	5.1	4.9	8.34	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Dupont Canada Inc. Maitland

INDUSTRIAL SECTOR: Organic Chemicals, Synthetic Fibres

RECEIVING WATERBODY: DIRECT: St. Lawrence River

INDIRECT:

DESCRIPTION OF ACTIVITY: Chemicals are converted to precursors of nylon, zytel plastics, Lycra yarn, hydrogen peroxide and freon chlorocarbons.,

EFFLUENT QUALITY: Contains soluble and insoluble organics.

EFFLUENT TREATMENT: Activated sludge, pre-denitrification/nitrification.

DISCHARGE TYPE: Continuous

COMMENTS:

Suspended Solids not in compliance.
The effluent from this plant combines with effluent from the tetra-ethyl lead plant through a common outfall. (control point 0200)
The Suspended Solids objective is based on an old 15 mg/Litre guideline.
This will be reviewed under the MISA program.

IMIS NUMBER: 0000080002 SIC CODE: 3783 MOE REGION: Southeast DISTRICT: Kingston

d0886

DUPONT CANADA INC - 0000080002
MAITLAND

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
CNTL PT 0200															
FLOW		154000	169000	172000	167000	189000	209000	176000	231000	231000	213000	184000	176000	189000	
KJELDAHL NITROGEN	ACTUAL	610	1050	920	880	670	760	430	180	330	480	1150	1140	717	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	
BIOCHEM OXYGEN DEMAND	ACTUAL	1260	1370	1320	1260	1420	1530	1300	1720	1760	1600	2160	2280	1580	
	REQUIREMENT	2330	2540	2580	2520	2840	3140	2640	3510	3450	3200	2760	2640	2850	
SUSPENDED SOLIDS	ACTUAL	2980	2310	2930	2910	2210	510	490	1620	2370	1980	3390	4880	2380	5
	REQUIREMENT	2330	2540	2580	2520	2840	3140	2640	3510	3450	3200	2760	2640	2850	
TOTAL CARBON	ACTUAL	1120	970	950	850	900	990	920	1120	1080	1120	1450	1739	1100	
	REQUIREMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: Kraft Foods Ltd. Ingleside

INDUSTRIAL SECTOR: Food and Beverage

RECEIVING WATERBODY: DIRECT: Hoople Creek

INDIRECT: 2.0 km to St. Lawrence River

DESCRIPTION OF ACTIVITY: Milk is made into cheese

EFFLUENT QUALITY:

EFFLUENT TREATMENT: Extended aeration using diffused air.

DISCHARGE TYPE: continuous through a submerged diffuser

COMMENTS:

BOD not in compliance.
Operational and design problems with the treatment plant caused elevated levels of biochemical oxygen demand and suspended solids as well as odours.
Control Order or Requirement and Direction will be prepared which will require effluent to meet Ministry standards, including one for phosphorus.

To meet final requirement of 15 mg/L, effluent diluted is a cooling water and final flow is not measured.

IMIS NUMBER: 0001940006 SIC CODE: 104 MOE REGION: Southeast DISTRICT: Cornwall

d0886

KRAFT LTD - 0001940006

ALL VALUES IN CONCENTRATION UNITS
(mg/L)

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
BIOCHEM. OXYGEN DEMAND	ACTUAL	17.7	11.7	15.5	17.4	47.1	14	14.5	8.9	12.5	9.1	14.3	13.9	16.4	4
	REQUIREMENT	15	15	15	15	15	15	15	15	15	15	15	15	15	
PHOSPHORUS	ACTUAL	4.4	3	3.1	6.1	9.7	5.5	4.4	4.9	2.8	5.1	4.9	6	5	
	REQUIREMENT														
SUSPENDED SOLIDS	ACTUAL	39.4	43.5	25.7	26.9	125	42.5	40.6	17.1	18.8	26.6	28	44.2	39.9	
	REQUIREMENT														

WASTEWATER DISCHARGE SUMMARY
1985

INDUSTRIAL SECTOR: Inorganic Chemicals

COMPANY NAME Nitrochem Inc.
& PLANT LOCATION: Maitland

RECEIVING WATERBODY: DIRECT: St. Lawrence River INDIRECT:

DESCRIPTION OF ACTIVITY: Nitric acid and different grades of ammonia based fertilizer are made.

EFFLUENT QUALITY: Contains nitrogenous wastes.

EFFLUENT TREATMENT: Equalization pond to go into new aquachemical treatment unit for reclamation of nitrogenous wastes.

DISCHARGE TYPE: Continuous

COMMENTS:

Kjeldahl Nitrogen, Nitrates and Nitrites not in compliance.
New aquachemical unit being installed in spring 1986. Completion expected in mid 1987.
Equalization pond and sewer segregation complete.
The final effluent was sampled once during 1985 and tested by an aerated 96-hr. rainbow trout bioassay.
The LC50 was estimated to have been equal to 2.2%.

IMIS NUMBER: 0001710003 SIC CODE: 372 MOE REGION: Southeast DISTRICT: Kingston

d0886

NITROCHEM - 0001710003
MAITLAND

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		2090	2070	2190	2200	2180	2660	2600	2280	2690	2450	2800	2690	241	
KJELDAHL NITROGEN	ACTUAL	1180	1018	1007	1064	1207	1800	1230	1006	1370	1730	1850	1380	1320	12
	REQUIREMENT	105	104	110	110	109	133	130	114	135	123	140	135	121	
NITRATES AND NITRITES	ACTUAL	796	612	683	629	605	881	789	668	953	845	945	869	773	12
	REQUIREMENT	42	41	44	44	44	53	52	46	54	49	56	54	48	
pH		8.2	8.8	8.3	8.9	9.1	9.1	8.4	8.3	8.4	9	9.1	8.9		
PHOSPHATES TOTAL	ACTUAL	0.21	0.2	0.22	0.3	1.6	1	0.4	2.2	1.5	1.4	1.1	1	0.93	
	REQUIREMENT	_	_	_	_	_	_	_	_	_	_	_	_	_	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME & PLANT LOCATION: The Canada Starch Co. Ltd.
800 James Street
Cardinal

INDUSTRIAL SECTOR: Food and Beverage

RECEIVING WATERBODY: DIRECT: St. Lawrence River INDIRECT:

DESCRIPTION OF ACTIVITY: Wet milling & oil refining processes

EFFLUENT QUALITY: Contains soluble organics, insoluble organics and phosphorous.

EFFLUENT TREATMENT: Aerated cell.

DISCHARGE TYPE: Continuous

COMMENTS:

COD and Suspended Solids not in compliance. Requirement Direction approved for serving. Notice scheduled to be served on November 27, 1986 with requirements of 25 mg/L for BOD5 and Suspended Solids, and 1 mg/L for phosphorous.

IMIS NUMBER: 0001720002 SIC CODE: 106 1083 1089 MOE REGION: Southeast DISTRICT: Kingston

d0886

THE CANADA STARCH CO. INC. - 0001720002
CARDINAL

ALL LOADS IN KG/DAY
ALL FLOWS IN THOUSAND CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		29.4	29.4	29.5	29.4	29.4	29.4	29.9	30.8	30.8	31.2	31.8	30.2	30.1	
CHEMICAL OXYGEN DEMAND	ACTUAL	1598	1315	1715	605	812	542	887	548	720	792	2107	1938	1130	12
	REQUIREMENT	*	*	*	*	*	*	*	*	*	*	*	*	*	
SUSPENDED SOLIDS	ACTUAL	406	705	553	852	714	480	503	528	484	1090	1130	984	702	12
	REQUIREMENT	73.5	73.5	73.7	73.5	73.5	73.5	75	75.1	75.1	78	79.5	75.3	75.2	

* Requirement of 25 mg/L BOD5 to be reported as COD when ratio of BOD:COD has been established.

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Agnico Eagle Mines Ltd. (Penn Mill)
& PLANT LOCATION: Cobalt

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT : Giroux Lake

INDIRECT: 8 km from Montreal R.

DESCRIPTION OF ACTIVITY: Gravity and flotation concentrates produced from silver ore.

EFFLUENT QUALITY: Contains dissolved metal salts of silver, cobalt, copper etc.

EFFLUENT TREATMENT: Tailings impoundment in former lake basin (Glen Lake).

DISCHARGE TYPE: Continuous

COMMENTS:

Mill burned to ground during winter 1985 - Under construction during 1986.
Loading limits are based on guidelines for Ontario mining tailings.
Arsenic in exceedance for June through to November. Annual arsenic average in exceedance.
Arsenic exceedances were minor (less than 1 kg/day).

IMIS NO.: 0001520006

SIC CODE: 0593 295

MOE REGION: Northeast

DISTRICT: North Bay

d1086

AGNICO EAGLE MINES LTD - 0001520006
SILVER DIVISION (PENN MILL)

ALL LOADS IN GRAMS/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		2600	2600	2600	2600	2600	2600	2600	2600	2600	2600	2600	2600	2600	
pH		8	8	7.8	7.8	7.7	7.7	7.5	7.6	8	8.3	8.1	7.9		
ARSENIC TOTAL	ACTUAL	0.9	0.8	1.2	1.1	0.9	2.2	4.9	3	5.7	2.5	1.6	1.2	2.2	6
	REQUIREMENT	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	
COBALT TOTAL	ACTUAL	<.3	<.3	<.3	<.3	<.3	<.3	<.3	<.3	<.3	<.3	<.3	<.3	<.3	
	REQUIREMENT	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	
COPPER TOTAL	ACTUAL	<.3	0.0004	<.0003	<.0003	<.0003	<.0003	<.0003	<.0003	<.0003	<.0003	<.0003	<.0003	<.3	
	REQUIREMENT	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	
IRON TOTAL	ACTUAL	<.3	<.3	<.3	<.3	<.3	<.3	<.3	<.3	<.3	<.3	<.3	<.3	<.3	
	REQUIREMENT	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	
NICKEL TOTAL	ACTUAL	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
	REQUIREMENT	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	
SUSPENDED SOLIDS	ACTUAL	3	3	3	3	3	3	3	3	3	3	3	3	3	
	REQUIREMENT	40	40	40	40	40	40	40	40	40	40	40	40	40	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Agnico Eagle Mines Ltd. (Refinery)
& PLANT LOCATION: Cobalt

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT : 5.5 km from Farr Creek

INDIRECT: 109 miles from Montreal R.

DESCRIPTION OF ACTIVITY: Refining and smelting of silver concentrates.

EFFLUENT QUALITY: Contains dissolved metal salts of silver, cobalt, copper, arsenic etc.

EFFLUENT TREATMENT: Cyanide destruction

DISCHARGE TYPE: Continuous

COMMENTS:

Total Arsenic exceedances were minor, less than 0.25 parts per million.
Loading limits based on guidelines for Ontario mining industry.
Arsenic in exceedance April, July, August and October.
Arsenic exceedances were minor - approximately 0.01 kg/day for the four months.

IMIS NO.: 0001520006
SIC CODE: 0593 295
MOE REGION: Northeast
DISTRICT: North Bay

d1086

AGNICO EAGLE MINES LTD - 0001520006
SILVER DIVISION (REFINERY)

ALL LOADS IN GRAMS/DAY
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		45	45	45	45	45	45	45	45	45	45	45	45	45	
pH		8.4	8.2	8.5	8.2	8.2	7.8	7.7	7.6	7.7	8.1	7.9	7.8		
ARSENIC TOTAL	ACTUAL	0.017	0.013	0.015	0.023	0.015	0.015	0.031	0.029	0.009	0.026	0.017	0.02	0.018	4
	REQUIREMENT	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	
COBALT TOTAL	ACTUAL	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	
	REQUIREMENT	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	
COPPER TOTAL	ACTUAL	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	
	REQUIREMENT	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	
IRON TOTAL	ACTUAL	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	
	REQUIREMENT	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	
NICKEL TOTAL	ACTUAL	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	
	REQUIREMENT	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	
CYANIDE FREE	ACTUAL	0	0	0.03	0.02	0.01	0.005	0.005	0.004	0.01	0.004	0.009	0.004	0.008	
	REQUIREMENT	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	

WASTEWATER DISCHARGE SURVEY
1985

COMPANY NAME: E.B. Eddy Forest Products Ltd.
& PLANT LOCATION: Ottawa Mill

INDUSTRIAL SECTOR: Pulp and Paper Mill

RECEIVING WATERBODY: DIRECT : Ottawa River

INDIRECT:

DESCRIPTION OF ACTIVITY: Converts pulp into paper for writing and printing

EFFLUENT QUALITY: Contains suspended solids (paper) and trace organics

EFFLUENT TREATMENT: Clarifier

DISCHARGE TYPE: Continuous

COMMENTS:

In compliance under MOE Control Order.
BOD is not limited by Control Order but is set by Federal guideline.
The final effluent was sampled once during 1985 and tested by 96-hr. rainbow trout bioassay.
The sample was found to have been non-lethal. Effluent toxicity complies with Federal Fisheries
Act regulations, more than 50% of fish survived in undiluted effluent.

IMIS NO.: 0000980201 SIC CODE: 271 MOE REGION: Southeast DISTRICT: Ottawa

d0886

E B EDDY FOREST PRODUCTS LTD - 0000980201
OTTAWA
ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		7750	6970	7510	6500	6900	6690	7850	8150	7713	7440	7390	6900	7320	
BIOCHEM. OXYGEN DEMAND	ACTUAL	1090	950	1220	930	940	1100	930	1140	930	1020	1010	950	1018	2
	REQUIREMENT	1083	1226	1179	1165	1132	1240	1121	1203	1048	1203	1222	1187	1170	
SUSPENDED SOLIDS	ACTUAL	730	700	620	540	540	540	610	450	450	660	660	580	590	
	REQUIREMENT	738	836	804	794	772	846	765	820	715	830	833	809	796	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Kerr Addison Mines
& PLANT LOCATION: Virginiatown

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT : Larder Lake to Larder R.

INDIRECT: Ottawa R.

DESCRIPTION OF ACTIVITY: Gold mining and recovery using a cyanide circuit.

EFFLUENT QUALITY: Contains arsenic, cyanide, copper, iron, nickel, dissolved solids and zinc.

EFFLUENT TREATMENT: Tailings, Barren Solution Pond.

DISCHARGE TYPE: Continuous

COMMENTS:

Not in compliance for Arsenic, Total Cyanide, Copper, Nickel and Zinc.
Recently constructed Barren Solution Pond to improve treatment.
Performance report is due in Jan. '87 and again in Jan. '88 on effectiveness of new Pond.
The quality is not expected to be any better in 1986 due to operational problems with the Barren Pond feed line. Corrective action has been taken and results are expected to improve for 1987.

IMIS NO.: 0001350008

SIC CODE: 052

MOE REGION: Northeast

DISTRICT: Timmins

d1086

KERR ADDISON MINES LTD - 0001350008

CONCENTRATIONS IN MG/L
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
pH		9.8	10.1	10.3	10	9.4	8.6	8.8	8.5	8.8	8.8	8.6	8.8		4
ARSENIC TOTAL	ACTUAL	0.202	0.37	1.35	1.43	0.6	1.07	1.17	0.98	0.99	2.6	1.57	0.95	1.1	8
	REQUIREMENT	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
CYANIDE	ACTUAL	10.8	17.5	15	17.9	7.5	6	1.6	1.05	1.7	3.5	2.6	2.5	7.3	8
	REQUIREMENT	2	2	2	2	2	2	2	2	2	2	2	2	2	
COPPER TOTAL	ACTUAL	0.73	0.82	1.13	1.43	0.54	0.49	0.64	0.4	0.61	0.51	0.5	0.51	0.69	2
	REQUIREMENT	1	1	1	1	1	1	1	1	1	1	1	1	1	
IRON TOTAL	ACTUAL	0.6	0.43	0.44	0.59	2.91	0.98	0.49	0.66	0.89	1.79	0.59	0.96	0.94	
	REQUIREMENT														
NICKEL TOTAL	ACTUAL	2.31	2.78	3.28	3.63	1.33	2.16	2.7	1.42	1.89	2.13	2.11	0.88	2.21	11
	REQUIREMENT	1	1	1	1	1	1	1	1	1	1	1	1	1	
DISSOLVED SOLIDS	ACTUAL	234	210	181	201	142	218	223	231	247	259	272	215	170	
	REQUIREMENT														
ZINC TOTAL	ACTUAL	1.78	2.77	2.2	1.63	0.96	0.6	0.58	0.21	0.5	0.45	0.42	0.19	1.02	4
	REQUIREMENT	1	1	1	1	1	1	1	1	1	1	1	1	1	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Lac Minerals (Macassa Div.)
(Formerly Willroy Mines)
& PLANT LOCATION: Kirkland Lake

INDUSTRIAL SECTOR: Metal Mining, Smelting, Refining

RECEIVING WATERBODY: DIRECT : Amikougami Cr.

INDIRECT: Blanche River

DESCRIPTION OF ACTIVITY: Gold mining, milling and recovery using Cyanide Circuit Recovery.

EFFLUENT QUALITY: Contains dissolved metal salts of copper, nickel, zinc etc

EFFLUENT TREATMENT: Tailings effluent.

DISCHARGE TYPE: Continuous

COMMENTS:

Cyanide not in compliance 3 times out of 12. Suspended Solids out of compliance for October.
Cyanide exceedances due to poor natural degradation of cyanide in winter months.
New tailings area/mill site samples submitted to MOE Timmins
The final effluent was sampled twice during 1985 and tested by aerated 96-hr. rainbow trout bioassays.
The LC50's were estimated to have been equal to 19% and 34.6%.

IMIS NO.: 0001410000
SIC CODE: 052
MOE REGION: Northeast
DISTRICT: Timmins

d1586

LAC MINERALS - 0001410000
MACASSA DIVISION
CONCENTRATIONS IN MG/L
ALL FLOWS IN CUBIC METRES/DAY

pH LIMIT 5.5 - 9.5

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		2436	2627	2786	2886	3109	3027	2863	2809	2554	2513	_	_	2301	
pH		8.1	8.1	8.3	8.3	8.3	9.2	8.2	8	8.1	8	8.1	8.2		
CYANIDE AVAILABLE	ACTUAL	0.83	2.08	2.69	3.38	0.78	0.16	0.15	0.12	0.16	0.1	0.8	1.98	1.1	3
	REQUIREMENT	2	2	2	2	2	2	2	2	2	2	2	2	2	
COPPER TOTAL	ACTUAL	0.08	0.38	0.54	0.71	0.54	0.4	0.18	0.18	0.12	0.11	0.19	0.45	0.32	
	REQUIREMENT	1	1	1	1	1	1	1	1	1	1	1	1	1	
SUSPENDED SOLIDS	ACTUAL	6.75	4.5	4	6.2	5.8	6	5.6	4	3.8	18.2	5.5	8.3	13	1
	REQUIREMENT	15	15	15	15	15	15	15	15	15	15	15	15	15	

WASTEWATER DISCHARGE SUMMARY
1985

COMPANY NAME: Nestle
& PLANT LOCATION: Chesterville

INDUSTRIAL SECTOR: Food and beverage

RECEIVING WATERBODY: DIRECT : South Nation R.

INDIRECT: Ottawa R.

DESCRIPTION OF ACTIVITY:

EFFLUENT QUALITY: Contains suspended solids (insoluble organics) and food organics

EFFLUENT TREATMENT: Secondary treatment with 4 month aeration lagoon.

DISCHARGE TYPE: Continuous - except from May 15 to Sept. 15

COMMENTS:

Not in compliance.
Certificate of Approval sets limit for BOD of 15 mg/L.
Suspended solids and phosphorus requirements set by MOE industrial effluent concentration guidelines.
Recent plant upgrades should show improvements in effluent quality in 1986.

IMIS NO.: 0000900001

SIC CODE: 1089

MOE REGION: Southeast

DISTRICT: Cornwall

d0886

NESTLE - 0000900001
CHESTERVILLE

ALL LOADS IN KG/DAY
ALL FLOWS IN CUBIC METRES/DAY

PARAMETER		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE	TOTAL EXCEEDANCES
FLOW		0	0	1170	2550	183	-	-	-	4460	2205	560	403	1280	
BIOCHEM. OXYGEN DEMAND	ACTUAL	0	0	37	34	-	-	-	-	20	17	33	32	21.7	3
	REQUIREMENT			17.6	38.3					66.9	33.1	8.4	6.045	19.2	
PHOSPHORUS TOTAL	ACTUAL	-	-	11.7	25.5	2.4	-	-	-	138	37.4	6.7	5.2	17.5	7
	REQUIREMENT			1.17	2.55	0.183				4.46	2.21	0.56	0.403	1.28	
SUSPENDED SOLIDS	ACTUAL	-	-	35.1	138	2	-	-	-	62.4	8.1	2.7	2.1	17.5	2
	REQUIREMENT			17.6	38.3	2.75				66.9	33.1	8.4	6.1	19.2	

Appendix B

LIST OF SOURCES BY MAJOR WATERSHED BASIN

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B.F.GOODRICH	NIAGARA FALLS	A-191
BORG-WARNER CHEMICALS	COBOURG	A-195
CANADIAN CANNERS LTD.	ST DAVIDS	A-197

APPENDIX B (CONT.)

LIST OF SOURCES BY MAJOR WATERSHED BASIN

LAKE ONTARIO (CONT.)	LOCATION	PAGE
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CORBY DISTILLERIES	CORBYVILLE	A-203
CYANAMID CANADA INC.	NIAGARA FALLS	A-205
CYANAMID CANADA INC. (WELLAND PLANT)	NIAGARA FALLS	A-207
DOFASCO INC.	HAMILTON	A-209
DOMTAR CONSTRUCTION MATERIALS LTD.	THOROLD	A-211
DOMTAR FINE PAPERS	ST.CATHARINES	A-213
DOMTAR PACKAGING	TRENTON	A-215
DOMTAR WOOD PRESERVING	TRENTON	A-217
DUPONT CANADA LTD.	KINGSTON TOWNSHIP	A-219
ELDORADO NUCLEAR (PORT GRANBY)	PORT HOPE	A-221
ELDORADO NUCLEAR LTD.	PORT HOPE	A-223
ELDORADO NUCLEAR LTD. (WELCOME)	PORT HOPE	A-225
EXOLON COMPANY OF CANADA LTD.	THOROLD	A-227
FLEET MANUFACTURING COMPANY LTD.	FORT ERIE	A-229
FORD MOTOR COMPANY	NIAGARA FALLS	A-231
FORD MOTOR COMPANY	OAKVILLE	A-233
FRASER INCORPORATED	THOROLD	A-235
GENERAL MOTORS OF CANADA LTD.	ST CATHARINES	A-237
GNB BATTERIES CANADA INC.	PORT ERIE	A-239
KIMBERLY CLARK OF CANADA LTD.	ST.CATHARINES	A-241
NORTON COMPANY	NIAGARA FALLS	A-243
ONTARIO HYDRO T.G.S. LAKEVIEW	TORONTO	A-245
PETRO-CANADA PRODUCTS INC.	OAKVILLE	A-247
PETRO CANADA PRODUCTS CO. (FORMERLY GULF CANADA)	MISSISSAUGA	A-249

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LIST OF SOURCES BY MAJOR WATERSHED BASIN

LAKE ONTARIO (CONT.)	LOCATION	PAGE
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STELCO INC.	HAMILTON	A-253
STELCO PAGE HERSHEY	WELLAND	A-255
STELCO WELLAND TUBES	WELLAND	A-257
STRATHCONA PAPER COMPANY	TWP OF CAMDEN EAST	A-259
TEXACO CANADA INC.	MISSISSAUGA	A-261
THE ONTARIO PAPER COMPANY LTD.	THOROLD	A-263
TRENT VALLEY PAPERBOARD MILLS	TRENTON	A-265
WASHINGTON MILLS LTD.	NIAGARA FALLS	A-267
ST. LAWRENCE RIVER		
BCL	CORNWALL	A-269
CIL INC.	CORNWALL	A-271
COURTAULDS	CORNWALL	A-273
DOMTAR FINE PAPERS	CORNWALL	A-275
DUPONT CANADA INC. (Tetra Ethyl Lead)	MAITLAND	A-277
DUPONT CANADA INC. (Nylon Intermediates)	KINGSTON	A-279
KRAFT LTD.	INGLESIDE	A-281
NITROCHEM	MAITLAND	A-283
THE CANADA STARCH COMPANY INC.	CARDINAL	A-285

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LIST OF SOURCES BY MAJOR WATERSHED BASIN

OTTAWA RIVER	LOCATION	PAGE
AGNICO EAGLE RIVER MINES LTD. (Penn Mill)	COBALT	A-287
AGNICO EAGLE MINES LTD. (Refinery)	COBALT	A-289
E.B. EDDY FOREST PRODUCTS LTD.	OTTAWA	A-291
KERR ADISON MINES LTD.	VIRGINIATOWN	A-293
LAC MINERALS (MACASSA DIVISION)	KIRKLAND LAKE	A-295
NESTLE ENTERPRISES LTD.	CHESTERVILLE	A-297

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ALPHABETICAL LIST OF SOURCES

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ABITIBI-PRICE INC. (FT WILLIAM)	THUNDER BAY	Lake Superior	A-23
ABITIBI-PRICE INC.	IROQUOIS FALLS	Hudson Bay	A-3
ABITIBI-PRICE INC. (PROVINCIAL MILL)	THUNDER BAY	Lake Superior	A-25
ABITIBI-PRICE INC. (FINE PAPERS)	THUNDER BAY	Lake Superior	A-27
AGNICO EAGLE MINES LTD. (PENN MILL)	COBALT	Ottawa River	A-287
AGNICO EAGLE MINES LTD. (REFINERY)	COBALT	Ottawa River	A-289
AMERICAN STANDARD	CAMBRIDGE	Lake Erie	A-119
ATLAS STEEL COMPANY LTD.	WELLAND	Lake Ontario	A-187
BAKELITE THERMOSETS LTD.	BELLEVILLE	Lake Ontario	A-189
B.F.GOODRICH	NIAGARA FALLS	Lake Ontario	A-193
BCL	CORNWALL	St. Lawrence R.	A-269
BEAVER WOOD FIBRE COPANY LTD.	THOROLD	Lake Ontario	A-191
BLACKSTONE INDUSTRIAL PROD.'S LTD.	STRATFORD	Lake Erie	A-121
BOISE CASCADE CANADA LTD.	FORT FRANCES	Hudson Bay	A-5
BOISE CASCADE CANADA LTD.	KENORA	Hudson Bay	A-7
BORG-WARNER CHEMICALS	COBOURG	Lake Ontario	A-195
CAMPBELL SOUP COMPANY LTD.	ST MARYS	Lake Erie	A-123
CANADIAN CANNERS LTD.	ST DAVIDS	Lake Ontario	A-197
CANADIAN INDUSTRIES LTD.	COURTRIGHT	Lake Erie	A-125
CANADIAN OXY-DUREZ	FORT ERIE	Lake Ontario	A-199
CELANESE CANADA INC.	TWP OF ERNESTOWN	Lake Ontario	A-201
CHAMPLAIN INDUSTRIES LTD.	TARA	Lake Huron	A-51
CHESAPEAKE AND OHIO RAILWAY CO.	ST THOMAS	Lake Erie	A-127
CIL INC.	CORNWALL	St. Lawrence R.	A-271

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ALPHABETICAL LIST OF SOURCES

Company	Location	Basin	Page
CORBY DISTILLERIES LTD.	CORBYVILLE	Lake Ontario	A-203
COURTAULDS	CORNWALL	St. Lawrence R.	A-273
CYANAMID CANADA INC.	NIAGARA FALLS	Lake Ontario	A-205
CYANAMID CANADA INC. (WELLAND PLANT)	NIAGARA FALLS	Lake Ontario	A-207
DENISON MINES LTD. (0001680008)	ELLIOT LAKE	Lake Huron	A-53
DENISON MINES LTD. (0001680107)	ELLIOT LAKE	Lake Huron	A-55
DENISON MINES LTD. (0001680206)	ELLIOT LAKE	Lake Huron	A-57
DOFASCO INC.	HAMILTON	Lake Ontario	A-209
DOME MINES LTD.	SOUTH PORCUPINE	Hudson Bay	A-9
DOMTAR CHEMICAL GROUP	ORILLIA	Lake Huron	A-59
DOMTAR CHEMICALS GROUP	GODERICH	Lake Huron	A-61
DOMTAR CONSTRUCTION MATERIALS LTD.	THOROLD	Lake Ontario	A-211
DOMTAR FINE PAPERS	CORNWALL	St. Lawrence R.	A-275
DOMTAR FINE PAPERS	ST.CATHARINES	Lake Ontario	A-213
DOMTAR PACKAGING	TRENTON	Lake Ontario	A-215
DOMTAR PACKAGING LTD.	RED ROCK	Lake Superior	A-29
DOMTAR WOOD PRESERVING	TRENTON	Lake Ontario	A-217
DOW CHEMICAL OF CANADA LTD.	SARNIA	Lake Erie	A-129
DUPONT CANADA INC.	CORUNNA	Lake Erie	A-131
DUPONT CANADA INC.	NORTH BAY	Lake Huron	A-63
DUPONT CANADA INC.	MAITLAND	St. Lawrence R.	A-277
DUPONT CANADA INC.	MAITLAND	St. Lawrence R.	A-279
DUPONT CANADA LTD.	KINGSTON TOWNSHIP	Lake Ontario	A-219

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Company	Location	Basin	Page
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E.B.EDDY FOREST PRODUCTS LTD.	ESPANOLA	Lake Huron	A-65
ELDORADO NUCLEAR LTD.	PORT HOPE	Lake Ontario	A-221
ELDORADO NUCLEAR ltd. (PORT GRANBY)	PORT HOPE	Lake Ontario	A-223
ELDORADO NUCLEAR LTD. (WELCOME)	PORT HOPE	Lake Ontario	A-225
ELDORADO RESOURCES LTD.	BLIND RIVER	Lake Huron	A-67
ESSO CHEMICALS	SARNIA	Lake Erie	A-133
ESSO PETROLEUM CANADA	SARNIA	Lake Erie	A=135
ETHYL CANADA INC.	CORUNNA	Lake Erie	A-137
EXOLON	THOROLD	Lake Ontario	A-227
FALCONBRIDGE LTD.	FALCONBRIDGE	Lake Huron	A-69
FALCONBRIDGE LTD., MOOSE LK WWTS	ONAPING FALLS	Lake Huron	A-71
FALCONBRIDGE LTD., ONAPING MINE	ONAPING FALLS	Lake Huron	A-73
FIBERGLAS CANADA LTD.	SARNIA	Lake Erie	A-139
FLEET MFG. COMPANY LTD.	FORT ERIE	Lake Ontario	A-229
FORD MOTOR COMPANY	NIAGARA FALLS	Lake Ontario	A-231
FORD MOTOR COMPANY	OAKVILLE	Lake Ontario	A-233
FORD MOTOR COMPANY	WINDSOR	Lake Erie	A-141
FORD MOTOR COMPANY	ST THOMAS	Lake Erie	A-143
FRASER INCORPORATED	THOROLD	Lake Ontario	A-235
GAY LEE FOODS COOPERATIVE LTD.	TEESWATER	Lake Huron	A-75

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ALPHABETICAL LIST OF SOURCES

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GENERAL MOTORS OF CANADA LTD.	ST CATHARINES	Lake Ontario	A-237
GNB BATTERIES CANADA INC.	PORT ERIE	Lake Ontario	A-239
GREAT LAKES FOREST PRODUCTS	DRYDEN	Hudson Bay	A-11
GREAT LAKES FOREST PRODUCTS	THUNDER BAY	Lake Superior	A-31
H.J.HEINZ COMPANY OF CANADA LTD.	LEAMINGTON	Lake Erie	A-147
INCO LTD. (Garson Mine)	COPPER CLIFF	Lake Huron	A-85
INCO LTD. (Copper Cliff Creek Nickel Refinery)	COPPER CLIFF	Lake Huron	A-79
INCO LTD. Sulphur Products	COPPER CLIFF	Lake Huron	A-91
INCO LTD. (Nolin Creek)	COPPER CLIFF	Lake Huron	A-89
INCO LTD. (Crean Hill Mine)	COPPER CLIFF	Lake Huron	A-81
INCO LTD. (Frood Stobie)	COPPER CLIFF	Lake Huron	A-83
INCO LTD. (Levack Tailings Area)	COPPER CLIFF	Lake Huron	A-87
INCO LTD. (Copper Cliff Creek W.W.T.)	COPPER CLIFF	Lake Huron	A-77
INCO METALS COMPANY	SHEBANDOWAN	Lake Superior	A-33
INCO METALS COMPANY	PORT COLBORNE	Lake Erie	A-149
INT.'L MINERALS AND CHEMICAL CORP	DUNNVILLE	Lake Erie	A-151
J.M.SCHNEIDER INC.	AYR	Lake Erie	A-153
JAMES RIVER MARATHON LTD.	MARATHON	Lake Superior	A-35
KERR ADDISON MINES LTD.	VIRGINIATOWN	Ottawa River	A-293
KIDD CREEK MINES LTD.	TIMMINS	Hudson Bay	A-13

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ALPHABETICAL LIST OF SOURCES

Company	Location	Basin	Page
KIDD CREEK MINES LTD.	TIMMINS	Hudson Bay	A-15
KIMBERLY CLARK OF CANADA LTD.	ST.CATHARINES	Lake Ontario	A-241
KIMBERLY-CLARK OF CANADA LTD.	HUNTSVILLE		A-93
KIMBERLY-CLARK OF CANADA LTD.	TERRACE BAY	Lake Superior	A-37
KRAFT LTD.	INGLESIDE	St. Lawrence R.	A-281
LAC MINERALS (MACASSA DIVISION)	KIRKLAND LAKE	Ottawa River	A-295
MACMILLAN BLOEDEL LTD.	STURGEON FALLS	Lake Huron	A-95
MITSUBISHI ELECTRONICS INC.	MIDLAND	Lake Huron	A-97
NESTLE ENTERPRISES LTD.	CHESTERVILLE	Ottawa River	A-297
NITROCHEM	MAITLAND	St. Lawrence R.	A-283
NORANDA HEMLO INC.	MARATHON	Lake Superior	A-39
NORANDA MINES LIMITED GECO DIV.	MANITOUWADGE	Lake Superior	A-41
NORTON COMPANY	NIAGARA FALLS	Lake Ontario	A-243
OGILVIE MILLS LTD.	THUNDER BAY	Lake Superior	A-43
OMSTEAD FOODS LTD.	WHEATLEY	Lake Erie	A-155
ONTARIO HYDRO (BRUCE GEN. STN.)	TIVERTON	Lake Huron	A-103
ONTARIO HYDRO (DOMESTIC STP)	TIVERTON	Lake Huron	A-99
ONTARIO HYDRO (HEAVY WATER PLANT)	TIVERTON	Lake Huron	A-101
ONTARIO HYDRO (Ash Lagoon)	NANTICOKE	Lake Erie	A-159
ONTARIO HYDRO T.G.S.	NANTICOKE	Lake Erie	A-161
ONTARIO HYDRO T.G.S. LAMBTON	COURTRIGHT	Lake Erie	A-157
ONTARIO HYDRO T.G.S. LAKEVIEW	TORONTO	Lake Ontario	A-245
ONTARIO HYDRO T.G.S.	THUNDER BAY	Lake Superior	A-45
PAMOUR PORCUPINE MINES	TIMMINS	Hudson Bay	A-17
PAMOUR PORCUPINE MINES	TIMMINS	Hudson Bay	A-19

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ALPHABETICAL LIST OF SOURCES

Company	Location	Basin	Page
PETRO-CANADA PRODUCTS CO. (Formerly GULF CANADA)	MISSISSAUGA	Lake Ontario	A-249
PETRO-CANADA PRODUCTS INC.	OAKVILLE	Lake Ontario	A-247
PETROSAR LTD.	SARNIA	Lake Erie	A-163
POLYSAR LTD.	SARNIA	Lake Erie	A-165
REICHHOLD LTD.	THUNDERBAY	Lake Superior	A-47
RIO ALGOM LTD. (Panel Mill)	ELLIOT LAKE	Lake Huron	A-105
RIO ALGOM LTD. (Quirke Mill)	ELLIOT LAKE	Lake Huron	A-107
RIO ALGOM LTD. (Stanleigh Mill)	ELLIOT LAKE	Lake Huron	A-109
SHELL CANADA LTD.	CORUNNA	Lake Erie	A-167
SHERMAN MINE	TEMAGAMI	Lake Huron	A-111
SOHIO	NIAGARA FALLS	Lake Ontario	A-251
SPRUCE FALLS POWER & PAPER CO. LTD.	KAPUSKASING	Hudson Bay	A-21
STANLEY HARDWARE	NEW HAMBURG	Lake Erie	A-169
ST. MARYS PAPER INC.	SAULT STE MARIE	Lake Huron	A-113
STELCO INC.	HAMILTON	Lake Ontario	A-253
STELCO INC., LAKE ERIE WORKS	NANTICOKE	Lake Erie	A-171
STELCO PAGE HERSHEY	WELLAND	Lake Ontario	A-255
STELCO WELLAND TUBES	WELLAND	Lake Ontario	A-257
STRATHCONA PAPER COMPANY	TWP OF CAMDEN EAST	Lake Ontario	A-259
SUNCOR SUNOCO GROUP	SARNIA	Lake Erie	A-175
TEND-R-FRESH POULTRY LTD.	PETERSBURG	Lake Erie	A-177
TEXACO CANADA INC.	PORT CREDIT	Lake Ontario	A-261
TEXACO CANADA INC., NANTICOKE REFINERY	JARVIS	Lake Erie	A-179

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ALPHABETICAL LIST OF SOURCES

Company	Location	Basin	Page
THE ALGOMA STEEL CORPORATION LTD.	SAULT STE MARIE	Lake SUPERIOR	A-115
THE ALGOMA STEEL CORPORATION LTD. (ORE DIVISION)	WAWA	Lake Huron	A-49
THE CANADA STARCH COMPANY INC.	CARDINAL	St. Lawrence R.	A-285
THE CANADIAN SALT COMPANY LTD.	WINDSOR	Lake Erie	A-181
The ONTARIO PAPER COMPANY LTD.	THOROLD	Lake Ontario	A-263
TRENT VALLEY PAPERBOARD MILLS	GLEN MILLER	Lake Ontario	A-265
UNION CARBIDE CANADA LTD.	SARNIA	Lake Erie	A-183
WASHINGTON MILLS LTD.	NIAGARA FALLS	Lake Ontario	A-267
WICKES MANUFACTURING CO. LTD.	WINDSOR	Lake Erie	A-185

APPENDIX D

IJC CRITERIA FOR SOURCE SELECTION AND ALPHABETICAL LIST

Direct discharge sources into the Great Lakes Basin were selected according to the following criteria, adapted from an IJC Task Force (comprising Canadian and US representatives from federal, state and provincial agencies).

1) The point source discharges directly or via a tributary stream into an "Area of Concern"* (as identified by the IJC) and contains a pollutant that contributes to the concern.
2) The effluent contains a persistent toxic substance or radioactive material as defined in the Agreement.
3) The point source discharges more than 3 kilograms per day of total phosphorus.
4) The effluent contains hazardous** or other pollutants above a minimum rate per day. These pollutants are Total Suspended Solids at or above 10 kilograms per day, Solvent-extractables at 10 kilograms or more per day, and Ammonia-Nitrogen at 6 kilograms or more per day.

Specifically, the following plants are included.

1. All Ontario plants that discharge a persistent toxic substance or radioactive material.

2. All Ontario Hydro plants because they discharge large quantities of heated once-through cooling water.

3. All plants within 70 kilometres of the Great Lakes that discharge more than 4,500 cubic metres of effluent per day. The Ministry through another document to the IJC reports the effluent loadings for all municipalities that discharge more than 4,500 cubic metres of effluent per day.

APPENDIX D (Cont'd)

The significance of each of the industrial discharges on the water quality of the great lakes depends on location, volume of flow and effluent characteristics. Some are identified as contributing to degraded water quality in "Areas of Concern" cited by the International Joint Commission.

* Environmental quality in an Area of Concern is degraded and the beneficial uses of the water and animal and plant life may be adversely affected.

** G.L.W.Q.A., Annex 4(4). A hazardous polluting substance is defined as an element or compound which, if discharged in any quantity into or upon receiving waters or adjoining shorelines, would present an imminent and substantial danger to public health or welfare. Public health and welfare includes, but is not limited to, human health and the conservation and protection of flora, fauna, public and private property, shorelines and beaches.

The following, Table 10, shows whether the selected point sources meet these criteria. (An "x" means that the criterion/criteria is/are met).

	A	B	C	D	E	F	G	H	I
1					TABLE 10				
2					IJC				
3					SOURCE SELECTION CRITERIA				
4					1984				
5									
6	COMPANY NAME	LOCATION	PAGE	CONTRIBUTES TO	CONTAINS PERSISTENT TOXIC,	CONTAINS OVER 3	CONTAINS MINIMUM	EFFLUENT IS MORE	LESS THAN
7			NUMBER	AREA OF CONCERN	HAZARDOUS SUBSTANCE OR	KILOGRAMS PER DAY	CONVENTIONAL	THAN 4,500	THAN 70 KILOMETRES
8					RADIOACTIVE MATERIAL	PHOSPHORUS	POLLUTANT	CUBIC METRES	FROM MAJOR
9								PER DAY	WATERBODY
10	ABITIBI-PRICE INC. (FT. WILLIAM DIV.)	THUNDER BAY	A-23	X	X	X	X	X	X
11	ABITIBI-PRICE INC. (PROVINCIAL PAPERS DIV.)	THUNDER BAY	A-25	X	X	X	X	X	X
12	ABITIBI-PRICE INC. (THUNDER BAY DIV.)	THUNDER BAY	A-27	X	X	X	X	X	X
13	AMERICAN STANDARD DIVISION OF WABCO STANDARD	CAMBRIDGE	A-119		X				
14	ATLAS STEEL COMPANY	WELLAND	A-187	X	X		X	X	X
15	B. F. GOODRICH	NIAGARA FALLS	A-193	X			X		X
16	BCL (FORMERLY TCF)	CORNWALL	A-269	X	X		X	X	X
17	BEAVER WOOD FIBRE COMPANY	THOROLD	A-191		X		X	X	X
18	BORG-WARNER CHEMICALS LTD.	COBOURG	A-195		X	X	X		X
19	CAN OXY-DUREZ	FORT ERIE	A-199	X					X
20	CANADIAN CANNER'S LTD.	ST. DAVID'S	A-197				X		X
21	CANADIAN INDUSTRIES LTD.	CORNWALL	A-271	X	X				X
22	CANADIAN INDUSTRIES LTD.	COURTRIGHT	A-125	X	X	X	X	X	X
23	CELANESE CANADA LTD.	ERNESTOWN TWP.	A-201				X	X	X
24	COURTAULDS LTD.	CORNWALL	A-273	X	X		X	X	X
25	CYANAMID CANADA LTD.	NIAGARA FALLS	A-205	X	X		X	X	X
26	CYANAMID CANADA LTD. (WELLAND PLANT)	NIAGARA FALLS	A-207	X	X	X	X	X	X
27	DENISON MINES LTD.	ELLIOT LAKE	A-53	X	X		X	X	X
28	DOFASCO	HAMILTON	A-209	X	X		X	X	X
29	DOMTAR CHEMICALS LTD.	GODERICH	A-61		X			X	X
30	DOMTAR CONSTRUCTION MATERIALS LTD.	THOROLD	A-211		X		X		X
31	DOMTAR FINE PAPERS	CORNWALL	A-275	X	X		X	X	X
32	DOMTAR FINE PAPERS	ST. CATHARINES	A-213		X		X	X	X
33	DOMTAR PACKAGING LTD.	TRENTON	A-215		X		X		X
34	DOMTAR PACKAGING LTD.	RED ROCK	A-29	X	X	X	X	X	X
35	DOW CHEMICAL CANADA LTD.	SARNIA	A-129	X	X		X	X	X
36	DUPONT CANADA INC.	CORUNNA	A-131	X	X			X	X
37	DUPONT CANADA INC. (TETRA ETHYL LEAD)	MAITLAND	A-277	X	X			X	X
38	DUPONT CANADA INC. (NYLON INTERMEDIATES)	MAITLAND	A-279	X			X	X	X
39	E. B. EDDY FOREST PRODUCTS LTD.	ESPANOLA	A-65	X	X		X	X	X
40	ELDORADO NUCLEAR LTD.	PORT GRANBY	A-223		X				X
41	ELDORADO NUCLEAR LTD.	WELCOME	A-225		X				X
42	ELDORADO NUCLEAR LTD.	PORT HOPE	A-221		X			X	X
43	ESSO CHEMICALS CANADA LTD.	SARNIA	A-133	X	X		X	X	X
44									
45									
46									

	A	B	C	D	E	F	G	H	I
47					TABLE 10 (CONTINUED)				
48									
49	COMPANY NAME	LOCATION	PAGE	CONTRIBUTES TO	CONTAINS PERSISTENT TOXIC,	CONTAINS OVER 3	CONTAINS MINIMUM	EFFLUENT IS MORE	LESS THAN
50			NUMBER	AREA OF CONCERN	HAZARDOUS SUBSTANCE OR	KILOGRAMS PER DAY	CONVENTIONAL	THAN 4,500	THAN 70 KILOMETRES
51					RADIOACTIVE MATERIAL	PHOSPHORUS	POLLUTANT	CUBIC METRES	FROM MAJOR
52								PER DAY	WATERBODY
53	ESSO PETROLEUM CANADA	SARNIA	A-135	X	X		X	X	X
54	ETHYL CANADA INC.	CORUNNA	A-137	X	X			X	X
55	FALCONBRIDGE LTD.	ONAPING FALLS	A-73		X				
56	FALCONBRIDGE LTD.	FALCONBRIDGE	A-69		X	X	X	X	
57	FALCONBRIDGE LTD. (MOOSE LAKE)	FALCONBRIDGE	A-71		X		X	X	
58	FIBERGLAS CANADA LTD.	SARNIA	A-139	X				X	X
59	FLEET MANUFACTURING COMPANY LTD.	FORT ERIE	A-229	X	X				X
60	FORD MOTOR COMPANY OF CANADA LTD.	OAKVILLE	A-233				X	X	X
61	FORD MOTOR COMPANY OF CANADA LTD.	NIAGARA FALLS	A-231	X		X	X		X
62	FORD MOTOR COMPANY OF CANADA LTD.	ST. THOMAS	A-143		X	X	X	X	X
63	FORD MOTOR COMPANY OF CANADA LTD.	WINDSOR	A-141	X	X		X	X	X
64	FRASER INC.	THOROLD	A-235		X		X	X	X
65	GENERAL CHEMICAL CANADA INC.	AMHERSTBURG	A-145	X	X		X	X	X
66	GENERAL MOTORS OF CANADA LTD.	ST. CATHARINES	A-237		X		X	X	X
67	GNB BATTERIES CANADA LTD.	FORT ERIE	A-239	X	X				X
68	GREAT LAKES FOREST PRODUCTS LTD.	THUNDER BAY	A-31	X	X	X	X	X	X
69	H. J. HEINZ COMPANY OF CANADA LTD.	LEAMINGTON	A-147			X	X	X	X
70	INCO LTD. (COPPER CLIFF CREEK)	SUDBURY	A-79	X	X		X	X	X
71	INCO LTD. (GARSON MINE)	SUDBURY	A-85	X	X		X		
72	INCO LTD. (NOLIN CREEK)	SUDBURY	A-89	X	X		X	X	
73	INCO LTD. SULPHUR PRODUCTS DEPT.	SUDBURY	A-91	X	X				X
74	INCO METALS LTD.	PORT COLBORNE	A-149	X	X		X	X	X
75	INTERNATIONAL MINERALS AND CHEMICALS	DUNNVILLE	A-151		X	X	X	X	X
76	J. M. SCHNEIDER INC.	AYR	A-153				X		
77	JAMES RIVER MARATHON LTD.	MARATHON	A-35	X	X	X	X	X	X
78	KIMBERLY CLARK OF CANADA LTD.	ST. CATHARINES	A-241				X	X	X
79	KIMBERLY CLARK OF CANADA LTD.	TERRACE BAY	A-37	X	X	X	X	X	X
80	KRAFT FOODS LTD.	INGLESIDE	A-281	X		X	X		X
81	MACMILLAN BLOEDEL LTD.	STURGEON FALLS	A-95		X		X	X	
82	NITROCHEM INC.	MAITLAND	A-283	X	X				X
83	NORTON COMPANY	NIAGARA FALLS	A-243	X			X	X	X
84	OGILVIE MILLS LTD.	THUNDER BAY	A-43	X			X		X
85	OMSTEAD FOOD LTD.	WHEATLEY	A-155			X	X		X
86	ONTARIO HYDRO (DOMESTIC TREATMENT)	TIVERTON	A-99						X
87	ONTARIO HYDRO (HEAVY WATER PLANT)	TIVERTON	A-159					X	X
88	ONTARIO HYDRO (THERMAL DATA)	TIVERTON	A-103					X	X
89	ONTARIO HYDRO (NANTICOKE)	NANTICOKE	A-159		X		X	X	X
90	ONTARIO HYDRO (NANTICOKE - THERMAL DATA)	NANTICOKE	A-161		X		X	X	X
91	ONTARIO HYDRO (LAKEVIEW)	TORONTO	A-245					X	X
92									

	A	B	C	D	E	F	G	H	I
93					TABLE 10 (CONTINUED)				
94									
95	COMPANY NAME	LOCATION	PAGE	CONTRIBUTES TO	CONTAINS PERSISTENT TOXIC,	CONTAINS OVER 3	CONTAINS MINIMUM	EFFLUENT IS MORE	LESS THAN
96			NUMBER	AREA OF CONCERN	HAZARDOUS SUBSTANCE OR	KILOGRAMS PER DAY	CONVENTIONAL	THAN 4,500	THAN 70 KILOMETRES
97					RADIOACTIVE MATERIAL	PHOSPHORUS	POLLUTANT	CUBIC METRES	FROM MAJOR
98								PER DAY	WATERBODY
99	ONTARIO HYDRO (LAMBTON)	COURTRIGHT	A-157	X					
100	ONTARIO HYDRO (THUNDER BAY)	THUNDER BAY	A-45	X				X	X
101	PETRO CANADA PRODUCTS LTD.	OAKVILLE	A-247	X	X		X		X
102	PETRO-CANADA PRODUCTS LTD. (FORM - GULF CANADA)	MISSISSAUGA	A-249	X	X		X	X	X
103	PETROSAR LTD.	SARNIA	A-163	X	X		X	X	X
104	POLYSAR LTD.	SARNIA	A-165	X	X		X	X	X
105	REICHHOLD CHEMICALS LTD.	THUNDER BAY	A-47	X	X		X		X
106	RIO ALGOM LTD. (PANEL MILL)	ELLIOT LAKE	A-105		X		X	X	X
107	RIO ALGOM LTD. (QUIRKE MILL)	ELLIOT LAKE	A-107		X		X	X	X
108	RIO ALGOM LTD. (STANLEIGH MILL)	ELLIOT LAKE	A-109		X		X	X	X
109	SHELL CANADA LTD.	CORUNNA	A-167	X	X		X	X	X
110	SOHIO	NIAGARA FALLS	A-251	X	X		X	X	X
111	ST. MARYS PAPER INC.	SAULT STE. MARIE	A-113	X			X	X	X
112	STANLEY WORKS LTD.	NEW HAMBURG	A-169		X				
113	STELCO INC.	HAMILTON	A-253	X	X		X	X	X
114	STELCO INC. LAKE ERIE WORKS	NANTICOKE	A-171		X	X	X	X	X
115	STELCO PAGE HERSEY WORKS	WELLAND	A-255		X		X	X	X
116	STELCO WELLAND TUBE WORKS	WELLAND	A-257	X	X				X
117	STRATHCONA PAPER COMPANY	CAMDEN EAST TWP.	A-259				X		X
118	SUNCOR SUNOCO GROUP	SARNIA	A-175	X	X		X	X	X
119	TEND-R-FRESH POULTRY	PETERSBURG	A-177				X		
120	TEXACO CANADA LTD.	PORT CREDIT	A-261		X		X	X	X
121	TEXACO CANADA LTD. (NANTICOKE REFINERY)	JARVIS	A-179		X				X
122	THE ALGOMA STEEL CORPORATION LTD.	SAULT STE. MARIE	A-115	X	X		X	X	X
123	THE CANADA STARCH CO. LTD.	CARDINAL	A-285	X			X		X
124	THE CANADIAN SALT COMPANY LTD.	WINDSOR	A-181	X	X			X	X
125	THE ONTARIO PAPER COMPANY INC.	THOROLD	A-263		X		X	X	X
126	TRENT VALLEY PAPERBOARD MILLS	TRENTON	A-265				X		X
127	UNION CARBIDE CANADA LTD.	CORUNNA	A-183	X	X		X		X
128	WICKES MANUFACTURING CO. LTD.	WINDSOR	A-185	X	X		X		X

APPENDIX E

SOURCES IN MISA INDUSTRIAL SECTORS

0100 Petroleum Refining

Esso Petroleum Canada, Sarnia
Petro-Canada Products Ltd., Mississauga
Petro Canada Products Ltd., Oakville
Petrosar Ltd., Sarnia
Suncor Sunoco Group, Sarnia
Texaco Canada Ltd., Port Credit
Texaco Canada Ltd., (Nanticoke Refinery), Jarvis

0200 Organic Chemicals and Synthetics

B.F. Goodrich, Niagara Falls
Bakelite Thermosets Ltd., Belleville
BCL (formerly TCF), Cornwall
Borg-Warner Chemicals Ltd., Cobourg
Canadian Oxy-Durez, Fort Erie
Canadian Industries Ltd., Cornwall
Celanese Canada Ltd., Ernestown Twp.
Courtaulds Ltd., Cornwall
Cyanamid Canada Ltd. (Welland Plant), Niagara Falls
Domtar Chemicals Limited (CDC Division), Orillia
Domtar Wood Preserving Ltd., Trenton
Dow Chemical Canada Ltd., Sarnia
Dupont Canada Inc., Corunna
Dupont Canada Inc., Kingston Twp.
Dupont Canada Inc. (Tetra Ethyl Lead), Maitland
Dupont Canada Inc. (Nylon intermediates), Maitland
Dupont Canada Inc. (Nipissing Works), North Bay
Esso Chemicals Canada Ltd., Corunna
Ethyl Canada Inc., Corunna
Polysar Ltd., Sarnia
Reichhold Chemicals Ltd., Thunder Bay
Shell Canada Ltd., Corunna
Union Carbide Canada Ltd., Corunna

Appendix E (Cont'd)

0300 Metal Mining and Refining

Agnico Eagle Mines Ltd. (Silver Division), Cobalt
Agnico Eagle Mines Ltd. (Refinery), Cobalt
Denison Mines Ltd. (0001680008), Elliot Lake
Denison Mines Ltd. (0001680107), Elliot Lake
Denison Mines Ltd. (0001680206), Elliot Lake
Dome Mines Limited, South Porcupine
Eldorado Nuclear Ltd., Port Hope
Eldorado Nuclear Ltd., Port Granby
Eldorado Nuclear Ltd. Welcome
Eldorado Resources Ltd., Blind River
Falconbridge Ltd., Falconbridge
Falconbridge Ltd. (Moose Lake), Falconbridge
Falconbridge Ltd. (Onaping Mine), Onaping Falls
Inco Ltd. (Copper Cliff Creek Nickel Ref.), Sudbury
Inco Ltd. (Copper Cliff Creek Wastewater Tr.), Sudbury
Inco Ltd. (Crean Hill), Sudbury
Inco Ltd. (Frood Stobie Emerg. Tailings Area), Sudbury
Inco Ltd. (Garson Mine), Sudbury
Inco Ltd. (Levack Tailings Area), Sudbury
Inco Ltd. (Nolin Creek), Sudbury
Inco Metals Ltd., Shebandowan
Inco Metals Ltd., Port Colborne
Kerr Addison Mines Limited, Virginiatown
Kidd Creek Mines Ltd. (0000990002), Timmins
Kidd Creek Mines Ltd. (0000990101), Timmins
Lac Minerals (Macassa Div.), Kirkland Lake
Noranda Hemlo Inc., Marathon
Noranda Mines Ltd. (GECO Division), Manitouwadge
Pamour Porcupine Mines (Pamour Site), Timmins
Pamour Porcupine Mines (Schumacher Division), Timmins
Rio Algom Ltd. (Panel Mill), Elliot Lake
Rio Algom Ltd. (Quirke Mill), Elliot Lake
Rio Algom Ltd. (Stanleigh Mill), Elliot Lake
Sherman Mine, Temagami
The Algoma Steel Corp. Ltd. (Ore Div.), Wawa

Appendix E (Cont'd)

0400 Industrial Minerals

Domtar Chemicals Ltd., Goderich
International Minerals and Chemicals, Dunnville
The Canadian Salt Company Ltd., Windsor

500 Pulp and Paper

Abitibi-Price Inc., Smooth Rock Falls
Abitibi-Price Inc., Iroquois Falls
Abitibi-Price Inc. (Ft. William Div.), Thunder Bay
Abitibi-Price Inc. (Provincial Papers Div.), Thunder Bay
Abitibi-Price, Inc. (Thunder Bay Div.), Thunder Bay
Beaver Wood Fibre Company, Thorold
Boise Cascade Ltd. (Fort Frances), Fort Frances
Boise Cascade Ltd., (Kenora), Kenora
Domtar Construction Materials Ltd., Thorold
Domtar Fine Papers Ltd., Cornwall
Domtar Fine Papers Ltd., St. Catharines
Domtar Packaging Ltd., Trenton
Domtar Packaging Ltd., Red Rock
E. B. Eddy Forest Products Ltd., Espanola
E. B. Eddy Forest Products Ltd., Ottawa
Fraser Inc., Thorold
Great Lakes Forest Products Ltd., Thunder Bay
Great Lakes Forest Products Ltd., Dryden
James River Marathon Ltd., Marathon
Kimberly-Clark of Canada Ltd., St. Catharines
Kimberly-Clark of Canada Ltd., Huntsville
Kimberly-Clark of Canada Ltd., Terrace Bay
MacMillan Bloedel Ltd., Sturgeon Falls
Spruce Falls Power and Paper Co. Ltd., Kapuskasing
St. Mary's Paper Inc., Sault Ste. Marie
Strathcona Paper Company, Camden East Twp.
The Ontario Paper Company Inc., Thorold
Trent Valley Paperboard Mills, Trenton

0600 Iron and Steel

Atlas Steel Company Ltd., Welland
Dofasco Inc., Hamilton
Ford Motor Company of Canada Ltd., Windsor
General Motors of Canada Ltd., St. Catharines
Stelco Inc., Hamilton
Stelco Inc. (Lake Erie Works), Nanticoke
Stelco Page Hersey Works, Welland
Stelco Welland Tube Works, Welland
The Algoma Steel Corporation Ltd., Sault Ste. Marie

0700 Electric Power Generation

Ontario Hydro (Domestic Treatment), Tiverton
Ontario Hydro (Heavy Water Plant), Tiverton
Ontario Hydro (Thermal Data Stations A and B), Tiverton
Ontario Hydro (TGS), Nanticoke
Ontario Hydro (Thermal Data), Nanticoke
Ontario Hydro (TGS, Lakeview), Toronto
Ontario Hydro (TGS, Lambton), Courtright
Ontario Hydro (TGS, Thunder Bay), Thunder Bay

0800 Inorganic Chemicals

Canadian Industries Ltd., Courtright
Cyanamid Canada Ltd., Niagara Falls
Exolon, Thorold
Fiberglas Canada Ltd., Sarnia
Ford Motor Company of Canada Ltd., Niagara Falls
General Chemical Canada Inc., Amherstburg
Inco Ltd. (Sulphur Products Dept.), Sudbury
Nitrochem Inc., Maitland
Norton Company, Niagara Falls
Sohio, Niagara Falls
Washington Mills Limited, Niagara Falls

Appendix E (cont'd)

Miscellaneous

Metal Finishing and Metal and Plastic Fabricators

American Standard Division of Wabco Standard, Cambridge
Blackstone Industrial Products, Stratford
Fleet Manufacturing Company Ltd., Fort Erie
Ford Motor Company of Canada Ltd., Oakville
Ford Motor Company of Canada Ltd., St. Thomas
GNB Batteries Canada Ltd., Fort Erie
Mitsubishi Electronics Ltd., Midland
Stanley Hardware, Div. of Stanley Canada Inc., New Hamburg
Wickes Manufacturing Co. Ltd., Windsor

Food Processors

Campbell Soup Company Ltd., St. Marys
Canadian Canners Ltd., St. David
Champlain Industries Ltd., Cornwall
Corby Distilleries Limited, Corbyville
Gay Lee Foods Cooperative Ltd., Teeswater
H.J. Heinz Company of Canada Ltd., Leamington
J.M. Schneider Inc., Ayr
Kraft Foods Ltd., Ingleside
Nestle, Chesterville
Ogilvie Mills, Thunder Bay
Omstead Food Ltd., Wheatley
Tend-R-Fresh Ltd. (Div. of Maple Leaf Mills), Petersburg
The Canada Starch Co. Ltd., Cardinal

Other Miscellaneous

Chesapeake and Ohio Railway Co. Ltd., St. Thomas

APPENDIX F

POLLUTANTS AND THEIR SIGNIFICANCE

In the Great Lakes context, overall loadings are the important measure of potential impact. The pollutants monitored and controlled by the Ministry of the Environment fall into one of four major groups defined by the International Joint Commission: Physical (settleable and suspended solids, temperature); chemical (persistent toxics, non-persistent toxics and others); microbiological; and radiological. The Ontario Ministry of the Environment document, Rationale For The Establishment of Ontario's Water Quality Objectives, September, 1979, provides additional information on the significance of these pollutants.

F.1 PHYSICAL

Under quiescent conditions suspended solids settle to the bottom where they may destroy fish spawning grounds and smother benthic organisms -- the basic food for many fish. Suspended solids may also plug fish gills. Nonsettleable solids in water increase turbidity, which reduces light penetration and thus restricts phytoplankton production. Thermal discharges from electricity generating stations can, if too hot, act as a thermal barrier that prevents cold water fish from entering the receiving waters.

F.2 CHEMICAL

1. Persistent Toxics

Toxic substances are defined (G.L.W.Q.A. Article 1 (1)) as substances that "can cause death, disease, behavioural abnormalities, cancer, genetic mutations, physiological or reproductive malfunctions or physical deformities in an organism or its offspring, or which can become poisonous after concentration in the food chain or in combination with other substances. Persistent toxics are defined (G.L.W.Q.A. Annex 12 (1)) as "a toxic substance with a half life in water greater than eight weeks". Half life means the time required for the concentration of the substance to dimish to one-half its original value in the water body.

Phthalic acid esters, including dibutyl phthalate, diphthalate and other phthalates, are found in the effluent of certain organic chemical manufacturing plants and are toxic to aquatic life. Polychlorinated Biphenyls (PCBS), are persistent in the environment and tend to accumulate in fish and sediments. PCB concentration limits in fish tissue protect birds and animals that eat the fish. The concentration of metals, including arsenic, cadmium, chromium, copper, iron, lead, mercury, nickel and selenium, is controlled to protect aquatic life or drinking water. Fluoride levels in surface waters are also limited (to a concentration of 1.2 milligrams per litre) to protect drinking water.

2. Non-Persistent Toxics

Non-persistent toxics have a half life in water of less than eight weeks and include various types of oils and waxes as well as ammonia-nitrogen. Oil and petrochemicals cause a visible sheen and impart an odour in receiving waters. In addition, they taint edible aquatic life and often cause deposits on nearby shores. Hydrocarbons are discharged by petroleum refineries and primary steel plants; animal fats, greases and vegetable oils from food processors; and soaps, greases, vegetable oils and waxes from soap manufacturers.

Ammonia-nitrogen is found in the effluent of primary steel producers, ore concentrating mills, fertilizer plants, petroleum refiners, synthetic organic factories and food processors. Depending on water temperature and pH, ammonia-nitrogen dissociates in varying amounts, forming un-ionized ammonia which is toxic to aquatic life. Hydrogen sulphide at undissociated concentrations above 2.0 micrograms per litre adversely affects aquatic life and also imparts a disagreeable odour to water.

3. Other Substances

The concentration of dissolved oxygen in water is lowered by the oxygen-demanding degradation of biodegradable materials. If too much oxygen is consumed by the biodegradable effluent in the receiving waters (i.e. if the Biochemical Oxygen Demand or BOD is too great), aquatic organisms can be adversely affected.

Often Chemical Oxygen Demand or Total Organic Carbon are used in place of the BOD test.

Although phosphorus is essential to plant growth and microorganism activity, too much causes excess algae, weed and slime growth. Phenolics, a group of organic substances, can adversely affect the taste of water and fish. At certain concentrations, phenolics in steel mill effluent are toxic to aquatic life forms. Phenolic compounds occur naturally in wood, coal and crude oil.

F.3 MICROBIOLOGICAL

Water used for body contact recreation activities should be substantially free from bacteria, fungi, or viruses that may produce enteric disorders or eye, ear, nose, throat and skin infections or other diseases and infections. Where any industrial effluent contains simple sugars, these compounds serve as food for bacterial growth. For each situation, the source has been required to segregate and treat separately its sanitary wastes.

F.4 RADIOLOGICAL

Radioactive pollutants, most commonly found in the nuclear fuel industry, are toxic in certain concentrations. The IJC agreement sets a limit of TED 50 (total equivalent dose integrated over 50 years calculated in accordance with IJC methodology) greater than 1 millirem to the whole body from a daily ingestion of 2.2 litres of lake water per day for one year.

F.5 HAZARDOUS POLLUTANTS

Annex 10, G.L.W.Q.A. contains two lists of compounds. One list is titled Hazardous Polluting Substances; the other, Potential Hazardous Polluting Substances. Ten inorganic chlorides are classified as hazardous and three as potentially hazardous. Cobalt is extremely toxic to fish. Three cobalt compounds are classified as hazardous.

Magnesium, an essential element for plant and animal life, can cause a cathartic action on the gastro-intestinal tract when present in drinking water in concentrations over 125 milligrams per litre. Water containing this concentration may also have a disagreeable taste.

At concentrations above 250 milligrams per litre, sulphates in raw drinking water may cause a similar effect to excessive magnesium. Ten sulphate compounds are classified Hazardous and three, Potentially Hazardous.

WS/emc/rmg
01276-11A.1
WWM/INDWTR

APPENDIX G

Ontario Ministry of the Environment
Regional Offices

The Director
Southwest Region
985 Adelaide Street South
London, Ontario

The Director
West Central Region
119 King Street West
12th Floor
Hamilton, Ontario

The Director
Central Region
7 Overlea Blvd.
4th Floor
Toronto, Ontario
M4H 1A8

The Director
Southeastern Region
133 Dalton Street
P.O. Box 820
Kingston, Ontario

The Director
Northeastern Region
199 Larch Street
Sudbury, Ontario

The Director
Northwestern Region
435 James Street South
P.O. Box 5000
Thunder Bay, Ontario

APPENDIX G (Cont'd)

Ontario Ministry of the Environment
Regional Offices

Halton-Peel District Office
1226 White Oaks Blvd.
Oakville, Ontario
L6H 2B9

Peterborough District Office
139 George Street North
Peterborough, Ontario
K9J 3G6

North Bay District Office
Northgate Plaza
1500 Fisher Street
North Bay, Ontario
P1B 2H3

Sault Ste. Marie District Office
445 Albert Street East
Sault Ste. Marie, Ontario
P6A 2J9

Sudbury District Office
11th Floor, 199 Larch Street
Sudbury, Ontario
P5E 5P9

Thunder Bay District Office
P.O. Box 5000
3rd Floor, 435 James Street South
Thunder Bay, Ontario
P7C 5G6

Cornwall District Office
2nd Floor, 4 Montreal Road
Cornwall, Ontario
K6H 1B1

Kingston District Office
P.O. Box 820
133 Dalton Avenue
Kingston, Ontario
K7L 4X6

Owen Sound District Office
1180 - 20th Street
Owen Sound, Ontario
N4K 6H6

Sarnia District Office
Suite 109, 265 Front Street
Sarnia, Ontario
N7T 7X1

Windsor District Office
6th Floor
250 Windsor Avenue
Windsor, Ontario
N9A 6V9

Cambridge District Office
P.O. Box 219, 400 Clyde Road
Cambridge, Ontario
N1R 5T8

Hamilton District Office
Box 2112
9th Floor, 119 King Street West
Hamilton, Ontario
L8N 3Z9

Welland District Office
637 - 641 Niagara North
Welland, Ontario
L3C 1L9